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EXCAVATIONS IN THE SOUTH BLOCK OF GALLINAS SPRINGS RUIN (LA 1178), A LARGE TOWN OF THE GALLINAS MOUNTAINS PHASE (LATE PUEBLO III - EARLY PUEBLO IV) ON THE MOGOSAZI FRONTIER

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DEDICATION

This volume is dedicated to the reconnaissance archaeologists of western New Mexico, notably:

E. B. Danson,
Michael Marshall,
John Stein,
Paul S. Martin,
A. E. Dittert,
and especially Emma Lou Davis.

May they, or their godchildren, continue to paint with a broad brush, to look clearly, to see a long way, and to be right or wrong for the right reasons.

ABSTRACT

At the request of Cibola National Forest, analyses of materials recovered from the 1987 excavations at Gallinas Springs Ruin were conducted. These studies involved detailed examination of all materials recovered from approximately 35 cubic meters of fill removed from 19 trenches excavated in preparation for the stabilization of the Ruin.

Data recovered from the excavation included lithic, ceramic, faunal and macro and microbotanical remains. The Chambers Group, Inc. study of these materials indicate that occupation at Gallinas Springs Ruin occurred during terminal Pueblo III and earliest Pueblo IV times and was characterized by a distinctive ceramic type that was rarely traded outside of the immediate vicinity of the Ruin. Furthermore, the ceramic analyses indicate that few intrusive wares were present at the site. These data are corroborated by the lithic data.

As a result of the investigations, the Gallinas Springs Ruin and several of the surrounding sites may represent a unique opportunity for a study of cultural isolationism which can be examined within a relatively small area of the Southwest. These studies should be further explored in a research oriented program conducted in a multiple stage project.

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Chapter 1

INTRODUCTION

by Kenneth J. Lord

Chambers Group, Inc. (CGI) has completed a program of analysis of materials recovered from the late Summer/early Fall 1987 excavations at Gallinas Springs Ruin, South Ruin Complex (LA 1178). This project was carried out under Contract 43-83D5-9-0550 with the United States Department of Agriculture, Forest Service (USDA FS), Cibola National Forest. This project was administered by Ms. Emily Garber of the Cibola National Forest serving in the capacity as Contract Officer's Representative, and Kenneth J. Lord who served as CGI's Principal Investigator. The goal of the project was to report on the cultural remains obtained from the site under USDA FS Purchase Orders 43-83D5-7-0603 and 40-83D5-7-0584. These projects were completed in conjunction in order to satisfy requirements for mitigative data recovery set forth in the Determination of No Adverse Effect agreement of June 24, 1987, developed by officials of the Cibola National Forest in consultation with the New Mexico State Historic Preservation Office and the Advisory Council on Historic Preservation.

This undertaking, including both the excavation and analysis of materials, was done to mitigate the effects of stabilization of the Gallinas Springs Ruin. The site was being actively eroded by Gallinas Creek as well as by side tributaries of the creek. Plans for stabilization included emplacement of riprap gabions and mesh fences into the north boundary of the South Ruin Complex along Gallinas Creek and a series of check dams along eroding portions of the lateral tributaries bounding the site on east and west.

Archaeological data recovery consisted of the excavation of nineteen trenches of varying sizes, with each trench being placed within or transverse to the area to be disturbed by mechanical trenching for gabion, gabion anchor keys, or check dam anchor installation. These excavations were discussed in the Preliminary report on the excavations authored by Bertram (1987); they resulted in the excavation of approximately 35 cubic meters of fill and the recovery of approximately 14,000 cultural items.

This represents a minimal effort within a site which has been professionally examined for almost 60 years. Mera (1933 notes) presents the first discussion of the site; his work resulted in a small ceramic collection still available for examination in the Museum of New Mexico. (These collections were utilized in the preparation of the ceramic section of the report). Gallinas Springs Pueblo was later visited by Danson (1957) in the 1940s; excavations were first carried out a decade after by Davis and Winkler (1959) and Davis (1964) and later by Green in 1974 and by the University of New Mexico Field School led by Tainter in 1977.

All of these studies indicated that Gallinas Springs Ruin represented a rather unique situation within the context of the surrounding culture. The site apparently had a ceramic type which at first glance appeared to represent an intrusion of Mesa Verde ceramics well south of the traditional homeland or trade range of the Mesa Verde. This incongruity in ceramic style was explored by Terry Knight (1981) in a report on the ceramics from the 1977 UNM field school. This study defined a new ceramic type, Magdalena Black-on-white, and several other wares which compose a distinct Magdalena ceramic tradition. Almost 10 years had passed before work was again initiated on the problem of Magdalena wares. This report again delves into the presence of a ceramic type which apparently developed within a state of isolation when compared to the better distributed ceramics of the region. Magdalena ceramic styles apparently are similar in design to other better known ceramic types of the region, yet are distinctive enough in paint type and paste to be readily distinguishable. This, in itself, is of particular interest. The lack of Magdalena ceramics in other sites outside of a circumscribed area surrounding the ruin, and the lack of non-local ceramics found within both this analytical assemblage and the 1977 collections, make this ceramic study conducted by Gomolak and Knight particularly important.

Other pertinent studies carried out in this analysis include the faunal studies conducted by Bertram. This analysis, as based on the limited sample from the 1987 excavations, indicates a dual system of faunal procurement revolving around pronghorn and jackrabbit at certain periods and deer, cottontail, and jackrabbit at other periods. Discussions of this dual system are developed. Also of interest is the apparent rarity or lack of both larger (bison, elk, bear) and smaller (prairie dog) species.

Analyses of lithic remains were also undertaken. The lithic studies revealed the presence of a primarily local procurement system, primarily dependant on the utilization of the local rhyolitic welded tuffs, with a limited amount of cherts and obsidians. Obsidian types apparently came from a wide ranging variety of sources. This focus on local resources is not surprising and fits quite well with the isolationism associated with the ceramic assemblage. This study represents one of the first to consider seriously the non-siliceous chipped stone industries common in pueblo sites.

Plant remains were also recovered and provide evidence of the usual domesticates, including corn. Of interest is the presence of two corn varieties that were apparently used simultaneously, but that may have been grown at different elevations.

In general, the limited testing program conducted at Gallinas Springs Ruin (when viewed in the overall perspective of the size of the site and the previous work accomplished) has provided a wealth of information that can be utilized by future researchers. The contributions on ceramic typologies and attribute listings presented by Gomolak and Knight may well serve as the expedient field model for future workers for distinguishing mid 1200 to early 1400s ceramics. The productivity of the research results are remarkable when one considers the limited amount of excavation completed and the materials recovered.

Limited studies, such as those accomplished here, can and have produced, results that make significant contributions to the archaeological community.

Chapter 2

CONTEXT OF WORK [1/]

by Emily Garber

2.1 INTRODUCTION

Gallinas Springs Pueblo has been at the top of the USFS Southwestern Region's list of sites requiring stabilization for some time. The magnitude of the proposed project and the monetary expenditure required, has meant that repeated requests for funding had to go unanswered for many years. Much of the communication about this project within the Cibola Forest and between Forest and Regional Office personnel has been on an informal basis. Thus, some of the decisions pertinent to this discussion of project chronology cannot now be chronicled.

The earliest record in files at the Cibola National Forest Supervisor's Office indicates interest and concern about the erosion of the Ruins in 1937. Samuel R. Servis took several photographs of the Gallinas Springs Pueblo on November 26, 1937. Mr. Servis located a few photo points and noted for one of these:

> ...To show erosion as the canyon slowly eats into the ruins. This shot should be taken every year..." (Gallinas Springs Ruin folder, on file at the Cibola NF Supervisor's Office).

Repetitions of that photograph may have been taken several times, but records indicate that the next set of photographs on file were taken in December of 1969 by then Magdalena District Ranger Bernard H. Brunner. Mr. Brunner managed to take his photographs in locations very close to those taken in 1937. In some cases, comparison of the photographs from 1937 and 1969 show, very graphically, the pattern of erosion of the Ruins during the 32 year period. Comparison indicates that the ruin may go through erosional phases. The ruin seems to be much more stabile in the 1969 photographs than it was in the 1937 ones and in 1987. A site inventory form accompanying Mr. Brunner's photographs includes a notation regarding the urgent need for erosion protection measures.

1/ Editor's note: this chapter is a slightly revised version of the *Documentation of No Adverse Effect* presentation submitted by Cibola National Forest to the Advisory Council and SHPO in June, 1987, as a necessary preliminary for the stabilization work. It is reprinted here with the author's permission.

Efforts at initiating stabilization of the arroyo began in earnest in February of 1974. On February 20, 1974 the site was visited by a team of concerned managers and specialists: Dee Green, Regional Archeologist; Carveth Kramer, Hydrologist; David Dailey, Cibola NF Recreation and Lands Staff; and Bernard Brunner.

On February 27, 1974 a letter and permit application form went out to Ernestene Green, then of Western Michigan University. The decision had been made, somewhere along the line, to conduct initial excavation and stabilization through the work of the Western Michigan Archaeological Field School. The field school excavated a number of rooms, including several of those threatened by the arroyo cutting; stabilization, through cement capping, was done on exposed room walls next to the arroyo. The cement capping was paid for by a $2000 contribution from the Forest Service. Subsequent to this work, the Forest Service was to arrange to construct gabion structures in the Gallinas Wash in an effort to direct the flow of water away from the site.

In March of 1974 the Regional Office consulted with the New Mexico Historic Preservation Officer regarding this undertaking. The correspondents agreed that the undertaking should be considered as having no adverse effect on the Ruin. The Advisory Council on Historic Preservation concurred on May 8, 1974.

Western Michigan University's Archaeological Field School conducted work at the site during the summer of 1974. This was their only season of work there.

In October of 1974, Carveth Kramer produced a report, *Flood Protection for the Gallinas Ruins*. In it he outlined proposed treatment of the Gallinas Wash near the Ruins, the headcuts on either side of the Ruins and stabilization of the arroyo near another set of ruins (recently assigned number AR 03-03-03-329) located upstream. He recommended gabion structures for the arroyo and located several riprap source areas.

In 1976, Joseph Tainter, then of the University of New Mexico and now of the Cibola National Forest, began negotiations for a full-scale University of New Mexico Archaeological Field School project to begin in 1977. This work was to continue and complete the project left incomplete by the withdrawal of the Western Michigan Archaeological Field School. Unfortunately, the UNM Archaeological Field School also pulled out of the project after one season.

From that time until 1987, the files on Gallinas Springs Pueblo show no correspondence regarding the stabilization project, but the project remained at the top of the Region's previously informal list of high priority stabilization projects. In October of 1985, the Cibola Forest invited the newly appointed Regional Archaeologist, Judith G. Propper, to visit the Ruins. She was accompanied by Emily Garber, Forest Archaeologist; Allan Hinds, Forest Recreation and Lands Staff; Allyn Wasser, Magdalena District Ranger; and Jerry Lopeman, District Recreation and Lands Staff.

With money finally promised from both the Regional Cultural Resources program and the Regional Hydrology program for this project in Fiscal Year 1987, Emily Garber worked with Forest Hydrologist David Pawelek to prepare a new plan and cost estimate for the work. Mr. Pawelek's plan for gabion structures and headcut stabilization structures was adopted with minor modifications.

2.2 THE SITE AND ITS SETTING

Gallinas Springs Pueblo (AR 03-03-03-001; LA 1178 and 1180) is a late thirteenth/early fourteenth century village located in the mountains northwest of Magdalena, New Mexico. It is a large, aggregated settlement consisting of four large room blocks, three smaller ones, and at least three major midden deposits. The Gallinas Springs community was the culmination and the end of several centuries of puebloan occupation of the Bear and Gallinas Mountains.

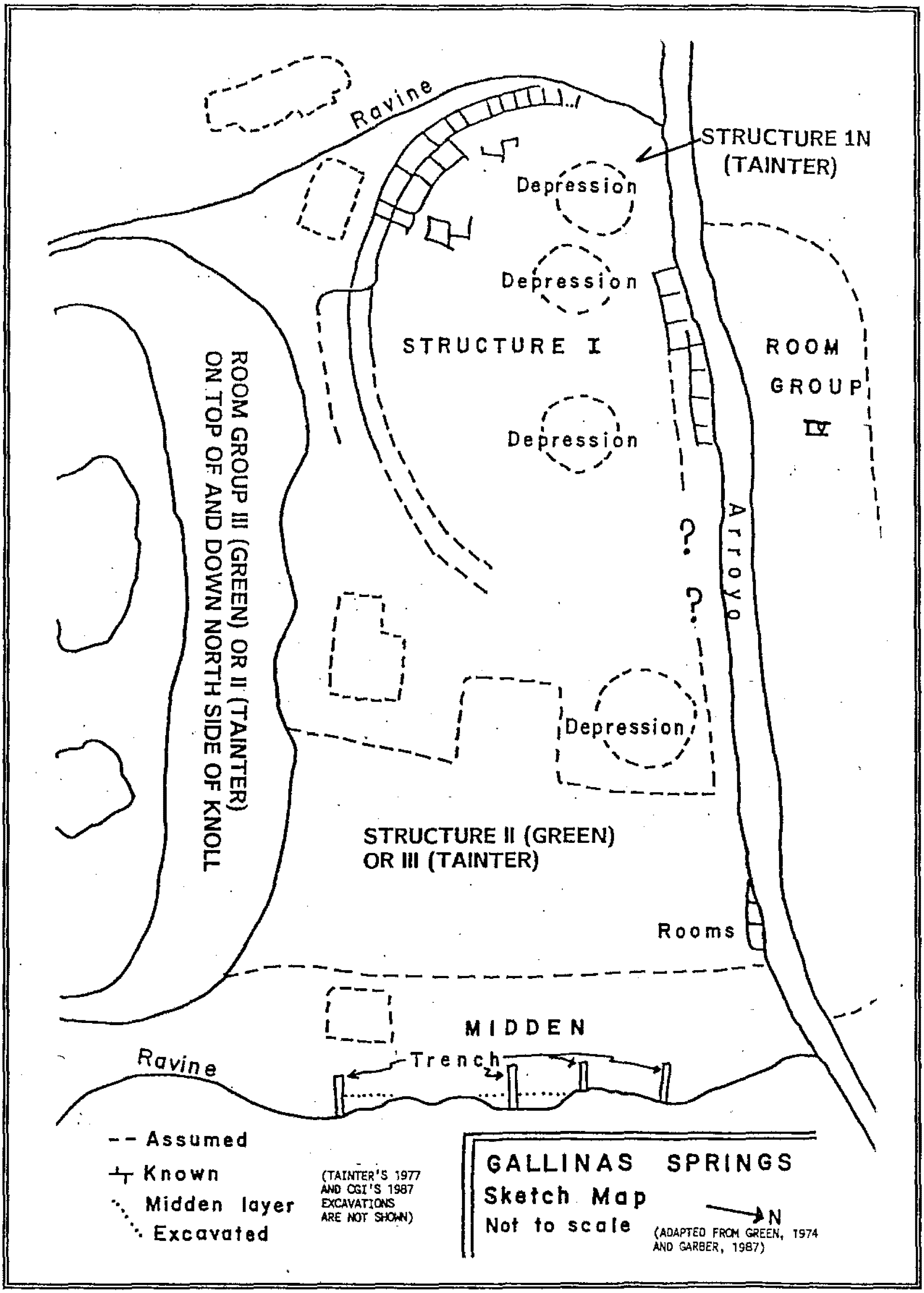
The site is located at an elevation of 7,400 ft above sea level. It is situated in a mixed conifer vegetational regime that consists of an overstory of pinyon-juniper and ponderosa pine. The immediate and larger areas surrounding the site are characterized by high topographic relief.

The pueblo is located in the bottom and on both sides of Gallinas Canyon at a point where the basin that feeds this drainage begins to narrow. Downstream, this intermittent wash ultimately forms a tributary of the Rio Salado. During summer thunderstorms this wash often flows bank-to-bank. A major part of the site has been eroded by the wash, so that an unknown number of rooms has been lost. Current rainfall at the elevation of the pueblo is about 15 inches per year, and the growing season is about 130 days (Cordell 1979: Maps 3,4).

A permanent spring originates within the site, most likely from between the two major room blocks that front the wash of the south side. Despite the plural form that has become the commonplace name for the pueblo, only one spring is at present known for the locality. In recent years its water has been piped downstream about 100 m to a cattle tank.

The four major roomblocks at the site (Figure 2-1) were labeled in two different projects as follows: 1) the circular ruin (northwest part of LA 1178) was labeled Structure I by Green. Its northwestern portion was labeled Structure IN by Tainter; 2) the ruin area to the east of Structure I was labeled Structure II by Green and Structure III by Tainter; 3) the knolltop ruin was labelled Structure III by Green and Structure II by Tainter; 4) both workers labeled LA 1180 as Structure IV. Previous investigators have estimated that the site may contain from 300 to 500 rooms (Danson 1957; Davis and Winkler 1960; Green 1974).

Precise dating of the Gallinas Springs site has proven elusive. Excavations by Western Michigan University in 1974, and by the University of New Mexico in 1977, established an earlier component underlying Structure I. Beams recovered in the 1977 excavations were


Ravine
STRUCTURE 1N
(TAINTER)
Depression
Depression
STRUCTURE I
ROOM
GROUP
IV
Depression
ROOM GROUP III (GREEN) OR II (TAINTER)
ON TOP OF AND DOWN NORTH SIDE OF KNOLL
Arroyo
?
?
Depression
STRUCTURE II (GREEN)
OR III (TAINTER)
Rooms
MIDDEN
Ravine
Trench
-- Assumed
Known
Midden layer
Excavated
(TAINTER'S 1977 AND CGI'S 1987 EXCAVATIONS ARE NOT SHOWN)
GALLINAS SPRINGS
Sketch Map
Not to scale
N
(ADAPTED FROM GREEN, 1974 AND GARBER, 1987)

sent to the University of Arizona Laboratory of Tree-Ring Research, but were juniper and could not be dated. An analysis of the 1977 ceramic collection was conducted by Terry Knight (1981). According to her analysis, datable ceramics overlapped significantly ca. 1275 AD, and were thought to be mutually exclusive prior to 1250 or after 1300. Hence, the traditional dating of the site--late thirteenth/early fourteenth century--appeared to be in order. Abandonment seemingly occurred shortly after 1300 AD.

No firm criteria existed to estimate the relative temporal placement of the room blocks. The flat bench occupied by Structure I and III is, according to Tainter (n.d.), the most habitable area of the site (flattest, easiest access, easiest location on which to build), and so, he proposed it was probably settled first. Two factors suggested to him that building at Structure I may have begun before Structure III: 1) the earliest occupation, so far as was known, occurred only under Structure I, and 2) Structure I appeared as a more formalized edifice. While planning was certainly evident in the building of Structure III, Tainter believed that it gives the appearance of being an addition, or as an appendage to Structure I. He saw the area of Structure IV as the next most attractive building site after Structures I and III. The knoll underlying Structure II (which is Green's Structure III) is steep, high, and difficult of access. These facts suggested that it was the least desirable spot of which to build, and the last to be occupied. In addition, a water catchment system to the south of this knoll could have functioned only as long as this knoll was empty of structures that would impede runoff. While this catchment system cannot yet be precisely dated, it was known that it was abandoned later in the site's history, so that building of Structure II must be correspondingly late. In summary, the building sequence for the site was proposed to have been Structures I, III, IV, and finally II (in Tainter's numbering system).

2.3 PREVIOUS ARCHAEOLOGICAL RESEARCH

Harry P. Mera made surface collections in the early 1930s for the Laboratory of Anthropology in Santa Fe, New Mexico. Mera's collections still reside at the Lab, but no notes regarding this work are known to exist, except for the site catalogs for LA 1178 and 1180 (Stuart Peckham, personal communication). [Editor's note: Gomolak and Knight were also unable to locate any of Mera's notes other than his identification slips which accompany the sherds (personal communication)].

In the late 1940s, Edward P. Danson of the Peabody Museum Upper Gila Expedition conducted an extensive survey throughout east-central Arizona and west-central New Mexico. The Gallinas Springs site was recorded in this survey and collections made. Danson's synthesis of the regional prehistory (1957) still stands as the major work of the area.

During the summer of 1960, Emma Lou Davis and James R. Winkler, of UCLA, conducted the first professional excavations at the site, in order to test for kiva murals (Davis and Winkler 1960). Areas of the site investigated at this time included the east midden, one of the kivas in Structure I (as labeled herein), and one room each in Structures IV and I (the

latter room adjacent to Gallinas Wash) (Davis and Winkler 1960; Davis n.d. 1964). Somewhat later, both S. Peckham and A. H. Warren made ceramic collections at the site (Warren 1974).

In 1974, excavations at Gallinas Springs were conducted by the Western Michigan University Archaeological Field School, under the direction of Ernestene Green. Work during this season consisted of mapping the site, testing the easternmost midden by digging several trenches, trenching of 279 m of wall, partial or complete excavation of 18 rooms, and capping of the walls thus exposed (Green 1974). Work in the Structure I area indicated the presence of an earlier structure under the rooms. In addition, work in the northern portion of the midden area to the east of the ruin indicated, on the basis of analysis by soil scientist (Green, personal communication, 1987) that a water control feature had been located in this area. These interesting phenomena could not be pursued, however, as plans for further work could not be realized.

The University of New Mexico Archaeological Field School project at Gallinas Springs took place during the summers of 1976 and 1977 under the direction of Joseph Tainter (then of the University of New Mexico). Minor amounts of surface work were conducted at the site in the summer of 1976, aimed at mapping and developing a site sampling framework. The major fieldwork by the UNM Field School was in the summer of 1977. Each of the four major room blocks was designated a sampling stratum and within each room block a room was randomly selected for excavation. The expectation was that ultimately all rooms surrounding the one randomly selected would be excavated. When 1977 proved to be the sole season for the UNM Field School at the site this objective could not be met. In all, ten rooms were excavated by the UNM Archaeological Field School. In addition, three 2 x 2 m squares were excavated in the midden. Tainter's major theses dealt with the level and structure of social organization that would have been necessary to enable population aggregation on the scale of Gallinas Springs (Tainter n.d.:34). Much of his data was architectural in nature.

> ...the fact that Gallinas Springs began as a large, coordinated, multi-community effort indicates that a significant degree of regional organization was already in existence...Gallinas Springs Pueblo was, thus, the result of social complexity, rather than the exclusive cause of it... (Tainter n.d.:35)

The following description of excavated areas is limited to those areas to be affected by the stabilization project. The structure numbers are those which were adopted by Tainter in his work at the site with the UNM Archaeological Field School during the summer of 1977 (refer to Figure 2-1).

2.3.1 Structure I/1N

While no stabilization project activities affected this area proper, the findings of previous excavations were important in anticipating the remains to be found in adjacent areas slated for testing in the course of the stabilization project. About 40 cm below the floor of one

of the rooms that Green excavated, evidence of an earlier occupation was noted. This evidence consisted of a puddled adobe floor and an adobe-lined and rimmed firepit. Evidence of this earlier occupation was also found during UNM's 1977 excavations (Tainter, personal communication, 1987). Deposits containing Tularosa Black-on-white and Chupadera Black-on-white pottery were found underlying a room floor. Sterile soil was found 4.01 m below surface in this area. Tularosa Black-on-white is normally not found later than about 1200 in this area.

Structure I has a D-shaped outline, but the possible loss of rooms to Gallinas Wash make it difficult to determine the original shape of the structure. A slightly earlier structure (AR 03-03-03-329) located about 1/8 of a mile upstream from Gallinas Springs Pueblo, is roughly circular or rounded rectangular in outline.

According to Green, much of Structure I was built at the same time. Additions to the structure were also planned and maintained the general shape of the original structure. Green suggested that an exterior wall was built and then rooms were constructed paralleling the exterior wall. Later exterior doorways were sealed and a new tier of outside rooms were built as was a new exterior wall on the west and southwest side. This exterior wall was built without exterior doorways. Green traced the wall to the north side of the structure where, she noted, two exterior tiers of rooms were added. In this area, called Structure IN by Tainter, the UNM excavations uncovered evidence of a ramada that had been renovated into a three-story masonry block. Tainter feels, on the basis of excavation, that to the north of this room there had been a plaza area that was subsequently enclosed as either a long, narrow room or as a roofed hall or entryway. This would have served to provide access to the rooms to the south (and possibly to those to the north, if there were rooms where the arroyo is now located).

2.3.2 Structure III

Several rooms were excavated in this area by both WMU and UNM. Green's work on the easternmost area of this structure indicated that the rooms had been individually built. Study of abutments of walls in the two rooms excavated by UNM, however, showed evidence of planned construction. The two rooms, adjacent to each other on a north-south axis, showed that two of the east-west running walls were constructed first. Then, these were subdivided by north-south crosswalls. After that, the north east-west wall was built. Floors in the rooms now closest to the arroyo were built on bedrock.

2.3.3 Midden

An interesting find in this midden area on the east side of the site was a small water retention system. UNM's excavations southeast of the knoll revealed that before Structure II was constructed, a series of shallow (25 cm), narrow (55 cm maximum) water channels were built at the base of this hill to catch runoff and channel it into either a holding facility, or an area of immediate use. Previously, in excavations in the midden northeast

of the knoll, Green discerned what she termed "a pond or reservoir" at the far north end of the midden, near the confluence of Gallinas Wash and the ravine and on the west side of the ravine (Green, personal communication, 1987). While not definite, it may be that the channels found in 1977 led to the "reservoir".

In the single excavation unit in which they were encountered, three such channels were located (P. Knight, field notes, 1977). Two of these, located to the north and south of each other, were major. The third was smaller and seemed only to connect the other two, perhaps as an overflow channel. These were built by placing an initial layer of adobe over bedrock. A further layer of adobe was placed atop this, with small pebbles pressed into and over it. Another layer of adobe was then placed down, and so forth. Finally, a cap of adobe was used to complete the channel rims. The higher lips of these rims were on the downhill side to catch runoff.

2.4 DESCRIPTION OF THE STABILIZATION DESIGN

2.4.1 Project Location

The Gallinas Springs Pueblo (AR 03-03-03-001; LA 1178 and 1180) is located as follows:

New Mexico Principal Meridian, Socorro County, New Mexico.

[redacted]

2.4.2 Project Work

Work consisted of constructing approximately 350 ft of gabion retaining wall structure and approximately 150 ft of gabion/wire structure along the bank of an ephemeral drainage channel to stabilize the bank and prevent future erosion of the Gallinas Springs Pueblo, a National Register property. It also entailed construction of four double-fence check dams along the eastern perimeter of the archaeological site and a double fence structure to stabilize a headcut located on the western side of the Ruin.

In order to ensure that the structures were sound and would withstand the substantial stress of flowing water, they were keyed into the wash and side drainage banks at several locations. The keys were constructed by digging a three foot wide trench located on the drainage side slopes (or in the case of the Gallinas Wash, into the south bank of the arroyo). These trenches were filled with rock. In some instances, it was felt that this keying-in could involve loss of information of archaeological importance. In order to mitigate against such loss, the key areas were located on the ground and were flagged several weeks prior to the arrival of the construction contractor. An archaeological crew from CGI excavated these areas. In the midden area on the east side of the site, the hydrologist tried to place the key structures in the trench areas previously excavated by WMU. Where

this was impossible, test excavations in this midden were carried out. In most cases, archaeological excavation was complete when sterile soil was encountered. The only anticipated exception to this was in cases where the excavation had proceeded well below the necessary depth of the key trench. Judging from previous work at the site, however, we did not anticipate that such a "stop excavation" decision would be necessary: as it developed, occupation deposits did, in most cases, end well before the bottom of the key trenches.

2.4.3 Area-Specific Impacts

The following discussion of area-specific impacts utilizes project areas defined on the "Gallinas Springs Ruins Stabilization Project" plans (on file at Cibola NF headquarters and at CGI) and structure numbers as assigned by the UNM Archaeological Field School project (see Figure 2-1).

Project Area A on the west side of the site entailed the excavation of a trench in which a gabion structure was anchored. The structure extended 39 ft south from the arroyo bank south and was three feet in width. Archaeologically, this area west of Structure I was an unknown. Inspection revealed that the area contained a good amount of trash. But the proximity to Gallinas Springs Pueblo Structure I indicated that the earlier occupation defined underlying Structure I might be visible in this area as well. Thus excavation in this area for the 39 ft trench and the key structures for the headcut stabilization was to serve the dual purpose of ruins stabilization and explication of a relatively unknown phase of site use. The mitigation plan in this area entailed several trenches placed perpendicular to the flagged and staked gabion trench area. These archaeological trenches were to extend a few feet beyond the proposed edges of the gabion trench. The trenches for the headcut stabilization anchors were to be archaeologically excavated wider than is necessary for setting in the key. This would protect information which might otherwise be lost during backhoe trenching. In the event that earlier structures were encountered, field decisions were to have been made concerning the extent of excavation necessary to mitigate against information loss.

No anchoring structures were to be dug into the arroyo wall in Area B. Several visits to the site however, had indicated another threat to the ruin in this area: while previous investigators have felt that the major treat to the site has been the summer monsoon gully washers, visits to the site in the spring of 1987 have shown that a great deal of material falls from the arroyo bank due to winter/spring freezing and thawing. The gabion structure was to serve not only to deflect July and August washes, but also to act as a retaining wall for the ruin and arroyo bank. After the gabion structure was in place, some slumping of the ruin and arroyo bank behind the structure was anticipated. During recent visits to the site it became clear that the site was about to lose some newly exposed walls which are nearly parallel to the wash. It was thought to be impossible to save these. However, the importance of this area for our understanding of the construction sequence of the ruin is great. Since several rooms in this area had already been totally excavated, we believed that the most useful information from this area would come from wall outlines and

abutment studies. It was proposed that archaeological excavators would trench several walls in this area in order to salvage this information but this effort was not included in the CGI contract. Subsequent to writing the No Adverse Effect Documentation, the COR learned that Green's group had, in fact, trenched in those areas. That is why trenching was not included in the CGI contract.

Key structures in Area C were to be placed every 18 ft along the arroyo bank. This was critical to the archaeologist since it is at this point where the arroyo cut becomes much more shallow. The westernmost portion of Area C contains the only area near the site where natural stabilization is occurring. Several wild roses have rooted here (and have been in this spot for at least the last ten years). Fencing, rather than gabions, was placed in this area to encourage plant growth and arroyo bank stabilization. The fencing was anchored with gabion structures placed into the bank. As with the other key structures, these were three feet wide and were entrenched several feet into the bank. The archaeological difficulty here was to lose as little as possible of the rooms and vegetation in this area. The westernmost portion of Area C fell in an area near the boundary between Structure I and III. Excavation in this area was thought to be potentially useful in helping us understand the relationship between Structures I and III. In addition, it was anticipated that the rooms in this area would date rather late in comparison with many of the rooms previously excavated. Abandoned rooms previously excavated here contained a great deal of later trash. It was hoped that we could study the contents of rooms abandoned later in the occupation sequence.

Archaeological excavation for Area C key structures further to the east along the arroyo bank were also considered important for further understanding of past site layout. Rooms excavated by WMU showed evidence of individual rather than block planned construction. UNM excavations further away from the bank showed the opposite: that several rooms had been built at once by building the long east-west walls first and then construction north-south crosswalls. The eastern areas of Area C which were impacted by this project were only a few feet above the arroyo bottom. If walls were found here at all, it was expected that they would likely to be close to floor level. If found, these would prove instructive regarding what has been lost to the arroyo in the past.

Archaeological work for the far eastern side of Area D and for the check dam structures in the drainage on the east side of Gallinas Springs Pueblo was to entail excavation into midden. The eastern anchor for Area D and the northernmost check dam structure were placed into the area where Green defined the "reservoir." Relocating of this feature would aid in determining the relationship between it and the water channels found during the 1977 work. In addition, records from the WMU work regarding this feature are scant. Coming into the feature from another side, we hoped, would aid in defining its size and shape.

Needless to say, all work during the contracted gabion and check dam construction was monitored closely by Forest Service professional and para-archaeologists.

Chapter 3

CULTURAL-HISTORICAL OVERVIEW

by Jack B. Bertram

3.1 INTRODUCTION

Southwestern archaeologists have long been aware that a remarkable social and demographic change occurred in late Pueblo II (AD 1050) to early Pueblo IV (AD 1400) in the chain of high mountains and plateaus which extends from the Mogollon Rim in central Arizona, eastward through the White Mountains of Arizona, on through the Little Colorado, Largo, Carrizo, Zuni, and Pescado drainages in New Mexico, and ends in the Cebolleta Mesa and Gallinas Mountains country between Magdalena and Laguna, New Mexico. It became evident decades ago that this area, together with the Río Grande Valley to the northeast, the lower Little Colorado country to the northwest, the Casas Grande country to the southeast, and the Upper and Middle Gila country to the south, were the centers of Puebloan populations in the period following the initial decline of the Chacoan (San Juan Basin) and Mimbres systems and the subsequent collapse of the Mesa Verde, Hovenweep (Northern San Juan Uplands), and Chuskan highland systems.

The Mogollon Rim-Gallinas Mountains arc of settlements have always been seen as problematic, as they appeared somehow to combine cultural attributes of the Anasazi (Northern Formative Puebloan) and Mogollon (South-Central Formative Puebloan) culture areas. Like the Alpine (Cibola) Mogollon, they made beautiful red decorated pottery and ornamented brown utility pottery, lived in highland settings, and displayed many other traits linking them to undoubted Mogollon groups farther south and east in the Jornado del Muerto and Mimbres country. Like the southern San Juan Basin (Cibola) Anasazi, they also made splendid white geometrically-decorated pottery and ornamented gray utility pottery, and lived within a social system centered on very large, monumentally planned, often apparently fortified Great Towns.

Once, when the author was an undergraduate in the late 1960s, he asked Dr. Florence Hawley Ellis, the *doyenne* of New Mexico archaeologists, where to divide the New Mexico Anasazi from the Mogollon. She (lecture notes, 1969) replied, "South of Highway 60 is Mogollon. North of Highway 66 is Anasazi. In between is another matter altogether. Go ask the Zuni, or Ed Danson, or Emma Lou Davis!" Following a sensible suggestion made originally by either Karl Laumbach or Peter Eidenbach, the author has come to call this "other matter" area the <u>Mogosazi Frontier</u>.

3.2 OVERVIEW AND CONTEXT

In the last 30 years, our knowledge of the western end of this problematic highland system has grown dramatically, due to the efforts mainly of academic researchers from Arizona institutions.

Mogosazi studies in New Mexico have fared less well. With the exception of one major reconnaissance study (Fowler, Stein, and Anyon 1987), one large powerline strip survey (Wilson and Wiseman, unpublished notes), one major management survey project (Kayser and Carroll 1988 and Hogan, et al. 1985), and one major academic research project, mostly still unpublished (summarized in Watson, et al. 1980), little work of regional scope has been done in the eastern half of the mountain settlement arc except inside of the Zuni nation's borders since the landmark studies of the Upper Gila Expedition (Smith 1950, 1973; Smith, Woodbury and Woodbury 1966; Brew and Danson 1948; Danson 1957; McGimsey 1951, 1980; Bullard 1962) and the Dittert-Ruppe Cebolleta Project (Dittert 1949, 1959; Dittert and Ruppe 1951).

Lacking an intensive review of small survey reports, a difficult project outside the scope of this present study, it is not presently possible to discuss the culture history of the Gallinas Springs area with any confidence or authority. What follows is abstracted (perhaps too freely) from other overviews, reconnaissance reports, and small project reports, notably Berman (1979), Kayser and Carroll (1988), Tainter (1980), Davis (1964), Danson (1957), Fowler, Stein, and Anyon (1987), Marshall and Walt (1984), Wimberly and Eidenbach (1980), and Bertram (assembler, 1989).

Settlement of the Gallinas Mountains-Salado River Valley area by pottery making, architectural people began at least by about AD 800, and plain brownware sites reported by Davis suggest that such settlement may have, in fact, begun much earlier. As one might expect, the local cultural sequence in the early Formative seems to be not quite the same as the San Marcial-Tajo-Elmendorf sequence to the south and east, or the Georgetown-Three Circle-Reserve-Apache Creek sequence to the southwest, or the White Mound-Kiatuthlana-Red Mesa-Cebolleta sequence to the northwest, but rather to be somehow intermediate to all. No large sites but many small and medium-sized sites are known, especially for the local Early Cebolleta/Reserve/Early Elmendorf equivalent period. The sites are characterized as mostly small, linear, or unit masonry and jacal pueblos with associated pithouses and/or kivas. A few Almost-Great Kiva sites are probably present as well. Few sites seem to have more than 50 rooms; most of the later sites have assemblages dominated by Socorro Black-on-white or Cebolleta Black-on-white, with variably identified Black-on-red and early polychrome wares, and both brown and gray utility wares.

Most researchers who have worked across the area have commented on the tendency for sites at lower elevations to have gray utility assemblages and for sites in higher, timbered settings to have mostly brown utility wares. This generalization breaks down to the northwest, where the Cebolleta phase and its antecedents is characterized by a mixture of gray and brown wares, alternating through time.

Prior to early-middle Pueblo II times (ca AD 1075 or so), all decorated ceramics in the area are painted with mineral pigments, with one exception. The exception is Elmendorf Black-on-white, found in the Rio Abajo section of the Middle Rio Grande Valley. Michael Marshall (Marshall and Walt 1984:77), normally a detached ceramicist, has described this carbon-painted, slipped whiteware as "clearly the most inferior example of Mogollon whiteware ever developed." Affiliations of Elmendorf Black-on-white are puzzling; it is variously described as carbon-painted, unstriated Chupadero Black-on-white, as carbon-painted, slipped southern Socorro Black-on-white, and as carbon-painted Casa Colorado Black-on-white. When one considers that valley-variety Chupadero Black-on-white is described as striated Casa Colorado Black-on-white, and that Casa Colorado Black-on-white is often described as slipped Socorro Black-on-white, it becomes evident that ceramic typological clarity in the Rio Abajo, Gallinas Mountains, and Rio Salado areas is not yet well established. The reader should note that Elmendorf is, in a sense, "negative Magdalena"; that is, it has bad finish work on fairly good paste.

3.3 THE PUEBLO III PERIOD ON THE MOGOSAZI FRONTIER

Sometime during the early portion of the Pueblo III period (i.e., about AD 1050 - 1100), dramatic changes in settlement patterns, ceramic style, and political organization swept across the Mogosazi Frontier. In the Rio Abajo, especially near the confluence of the Rio Grande and Rio Salado, the Late Elmendorf phase saw the growth of fortified and occasionally large communities, such as LA 5384 (Bowling Green Pueblo), LA 31692 (El Nido de las Piedras), and, most dramatically, LA 2004 (Piedras Negras Ruin), all described by Marshall and Walt (1984). LA 2004 had approximately 150 rooms; it lay at the center of a cluster of perhaps six medium-sized or large Late Elmendorf sites.

A similar shift occurred in the Cebolleta Mesa areas, where Late Pilares and Early Kowina phase sites are aggregated and defensive; Cebolleta Ruin may have 350 ground-floor rooms, and two Great Kivas. Pottery in this area is best seen as a local expression of the Tularosa phase ceramic developments farther to the southwest around Quemado, where the same trends toward aggregated architecture and upland settlement shift are also pronounced.

Small sites (i.e., hamlets, farmsteads) become rare everywhere in the area during this period. Especially toward the end of the period, evidence of systematic warfare appears to be present in the Cebolleta, the Ramah, and the Quemado areas (the Rio Abajo and Gallinas/Salado area have never undergone an excavation program, but the same could be true there, as well).

The period immediately following the Early Kowina/Tularosa/Late Elmendorf phase saw abandonment of the Quemado area, abandonment of most of the sites in the North Plains and southern Cebolleta Mesa, and a ceramic revolution in the White Mountain, Zuni, Acoma-Laguna, and Rio Abajo, in which White Mountain Redwares, and local congeners/ copies there of, became glaze wares: Heshotautha Glaze Polychrome (GPc), late Springerville GPc, Kwakina GPc, Four Mile GPc, Arenal GPc, and Los Padillas GPc (Carlson 1970).

3.4 THE GALLINAS MOUNTAINS SITES IN CONTEXT

In the Gallinas Mountains, the same sequence of events seems to have occurred. Perhaps six large towns, the largest of which was Gallinas Springs Pueblo, were founded by perhaps AD 1200. All were in upland canyons, and most seem to have had defensible site plans. All participated in a local ceramic tradition initially producing local congeners of White Mountain redwares, which rapidly evolved into full glazewares not very different from the Zuni, Acoma, or Piro/Tiwa early glaze types. All lie within a single area of about five square miles.

The Gallinas Mountains sites are unique in several respects. They acquired very few trade ceramics, they seem to have exported equally few trade ceramics, and they manufactured a unique and uniquely recognizable carbon-painted whiteware (Magdalena Black-on-white) which has been variously described as Mesa Verde Black-on-white, McElmo Black-on-white, Galisteo Black-on-white, Santa Fe Black-on-white, and "good" Elmendorf Black-on-white (a contradiction in terms, it would seem), but which is really unlike any of these types. Rather, Magdalena Black-on-white can be seen as almost a local, carbon-painted, highly slipped and polished version of the Tularosa Black-on-white variants. Within a Magdalena assemblage, one can find many examples of style and design treatment reminiscent of every stage of Tularosa Black-on-white development from Reserve-Tularosa transitional involuted styles to latest Klagetoh (i.e., terminal Tularosa) open patterns (cf. Fowler 1989). Of course, these same design sequences also occur in the redwares of the White Mountain series, and they may also occur in Magdalena redwares as well. Unfortunately, we do not yet know enough to be sure that "Reserve/Tularosa-like" Magdalena Black-on-white is earlier than "Klagetoh-like" Magdalena Black-on-white, but this seems likely.

By the middle of the fourteenth century, at about the time of abandonment of the last, largest Quemado area towns and southern Cebolleta towns, the six or so large Magdalena Black-on-white towns were also abandoned. These included Gallinas Springs Ruin itself (LA 1178 and LA 1180; Davis SOC 1 and 2; Danson 118; USFS AR 03-03-03-01); the upstream town (Davis SOC-3; USFS AR 03-03-03-329; Danson 117); the downstream town (LA 5994?; Davis SOC-36; USFS AR 03-03-03-002; no Danson number); and, two miles to the south, Council Rock Ranch Village (Davis SOC-19; Danson number unknown; LA 5978?), Council Rock Tank North Village (Davis SOC-37; LA 5995?), and Council Rock Tank South Village (Davis SOC-38; LA 5996?).

3.5 THE GALLINAS MOUNTAINS SITES AND EXTERNAL RELATIONS

There are very few other sites in the literature which seem to have any Magdalena whiteware in their assemblages. Two of these are: 1) "Camelot-on-the-San-Agustín" (Davis SOC-16, LA 5975), a large dispersed community with mostly Cebolletan pottery which lies only about 10 km west of Gallinas Springs, overlooking the San Agustín Plains, and 2) Newton Pueblo (LA 13422), another Cebolletan large town lying about 50 km northwest of Gallinas Springs on the southwestern end of Cebolleta Mesa. It appears that these communities were also abandoned at about AD 1350.

Other towns with Magdalena Black-on-white as an accessory or trade ware are few. One lies 65 km to the south (LA 1131); its assemblage has White Mountain Redwares, Magdalena Black-on-white, and El Paso Polychrome as dominant types (Gomolak, Chapter 8, this volume). The others are Elmendorf/Ancestral Piro towns, including Bowling Green Pueblo (LA 5384) and Piedras Negras Ruin (LA 2004), both of which are described as having some "Southern McElmo" or "Galisteo" Black-on-white. Farther afield, one cannot determine the presence of Magdalena wares; even knowledgeable writers like Danson, and Fowler, Stein, and Anyon have discussed the towns just mentioned without noting the presence of carbon whitewares at all. Until Magdalena Black-on-white becomes a well-recognized type, or until petrological studies begin to differentiate the "St. Johns clones" and thus at last allow recognition of Magdalena redwares, we cannot say whether the Magdalena folk exported any decorated pottery at all. It would seem, however, that they rarely did so. The overall impression of the author is that the Magdalena Black-on-white towns were isolated, almost under siege. <u>They simply do not appear to have traded very much</u>.

Laumbach (personal communication, 1990) has seen "creamy, crackled slip, carbon paint whiteware sherds as a very rare but persistent component of Late El Paso sites across much of south central New Mexico. <u>However</u>, with one exception, these sherds <u>do not</u> have the gritty, friable, crumbly paste which is diagnostic for most Magdalena Black-on-white. The one exceptional sherd was reportedly found in the E. Potrillos Mountains".

At this stage of study, speculation is pointless as to the fate of the Gallinas Springs folk after abandonment of the Gallinas Creek and Council Rock Creek towns. We can be sure only that they left, sometime in the early Pueblo IV period, and that the Gallinas Mountains never again had a substantial puebloan resident population. People in central New Mexico thereafter concentrated their settlements in essentially those areas where they were encountered by the first Spanish explorers two hundred years later.

Chapter 4

FIELDWORK DESCRIPTION [1/]

by Jack B. Bertram

4.1 INTRODUCTION

In 1987, Chambers Group, Inc. (CGI) completed a program of archaeological excavations at Gallinas Springs Ruin, South Ruin Complex (LA 1178). The excavation program was carried out under Purchase Orders 43-83D5-7-0603 and 40-83D5-7-0584 with the United States Department of Agriculture, Forest Service (USFS), Cibola National Forest. The goal of the excavation program was to satisfy requirements for mitigative data recovery set forth in the Determination of No Adverse Effect agreement of 24 June, 1987, developed by officials of Cibola NF in consultation with NMSHPO and the Advisory Council on Historic Preservation (USFS 1987).

The agreement of 24 June was developed in order to permit stabilization of portions of LA 1178 being actively eroded by Gallinas Creek as it cuts through the site, and by lateral tributaries which cut along the east and west margins of the main South Ruin complex. Plans for stabilization included the emplacement of mesh and riprap gabions and mesh fences into the north boundary of the South Ruin Complex along Gallinas Creek, together with construction of mesh and riprap checkdams along eroding potions of the lateral tributaries bounding the South Ruin Complex on the east and west.

Archaeological data recovery consisted of the excavation of nineteen trenches of varying sizes (Figure 4-1), with each trench being placed within or transverse to the area to be disturbed by mechanical trenching for gabion, gabion anchor key, or check dam anchor installation. Trench sizes and their general location were specified by the agreement of 24 June and by contract; specific locations were selected in the field by the USFS Contracting Officer's Representative (COR), Emily Garber, in consultation with the CGI Principal Investigator and Project Director. A rough instrument survey carried out by CGI personnel was limited to mapping of excavated areas relative to the site. Later in the project, USFS personnel carried out a laser transit survey which exactly located almost all CGI excavations. The latter survey's data were consulted for precise trench locational information and trench datum true elevations as reported in this document.

[1/] Editor's note. This chapter is a condensed and revised version of the preliminary excavation report (Bertram 1987) submitted to FS-Cibola by CGI at the conclusion of the 1987 contract.

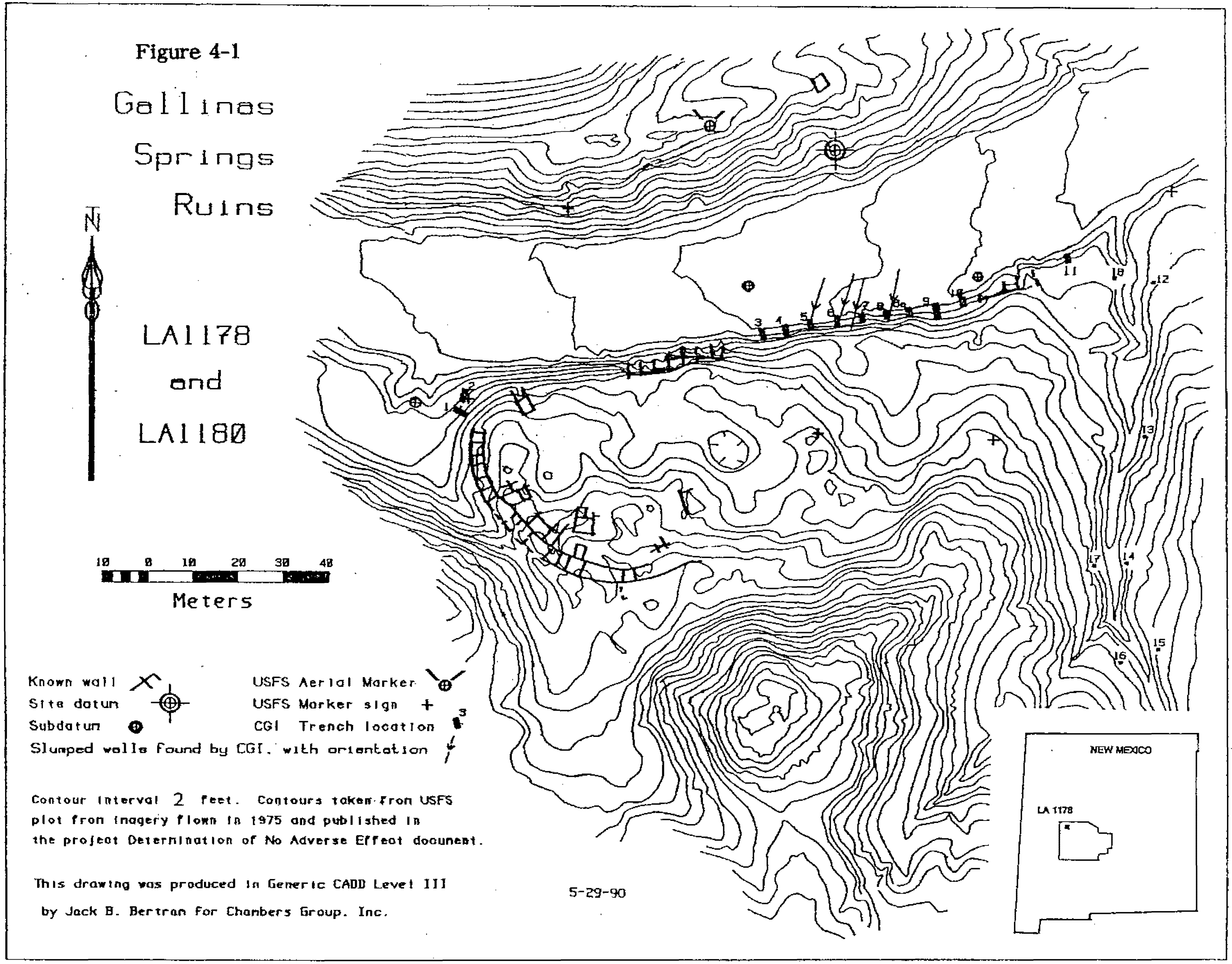

Gallinas
Springs
Ruins
N
LA1178
and
LA1180
10 0 10 20 30 40
Meters
Known wall
Site datum
Subdatum
USFS Aerial Marker
USFS Marker sign
CGI Trench location
Slumped walls found by CGI, with orientation
Contour interval 2 feet. Contours taken from USFS
plot from imagery flown in 1975 and published in
the project Determination of No Adverse Effect document.
This drawing was produced in Generic CADD Level III
by Jack B. Bertran for Chambers Group, Inc.
5-29-90
NEW MEXICO
LA 1178

Figure 4-1

4.2 FIELD PROJECT STAFFING

Excavations were carried out during the periods of September 9-18 and September 21-24, 1987. Field crew members were Jack Bertram (Project Director), Jon Frizell (Archaeologist/Team Leader/Stratigrapher), Steven Hoagland (Archaeologist/Team Leader), Carolyn Daniel (Archaeologist), and Michael Kennedy (Archaeologist). Dr. Kenneth Lord (Principal Investigator) joined the field crew on September 9-11 and September 22-23. The COR conducted regular field visits during both field sessions.

4.3 FIELDWORK CHRONOLOGY

Table 4-1 summarizes the daily effort of work within the specified trenches. The contractual term unit is referred to in this report as a trench. Grid squares within the contractual units are referred to as units within the trenches; the term level refers to a natural or arbitrarily defined minimum excavation layer within a grid square/unit. The columnar headings in Table 4-1 thus refer to trenches and 1 x 1 m units within those trenches. Throughout the remainder of this report, units (unless otherwise specified) refer to 1 x 1 m grid squares within the trenches. Trench numbers 12 through 18 have no units since they are 0.6 m cubes. The key below correlates contractual and field numbers:

Trench Contractual Number	Trench Field Number
1	1
2	2
3	4
4	5
5	6
6	7
7	8
8	8A
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16
17	17
18	18
19	3

Table 4-1

LEVELS EXCAVATED BY TRENCH AND UNIT BY DAY

Date	Tr. 1 Unit 1	Tr. 1 Unit 2	Tr. 1 Unit 3	Tr. 2 Unit 1	Tr. 2 Unit 2	Tr. 2 Unit 3	Tr. 3 Unit 1	Tr. 3 Unit 2	Tr. 4 Unit 1	Tr. 4 Unit 2	Tr. 5 Unit 1	Tr. 5 Unit 2	Tr. 6 Unit 1	Tr. 6 Unit 2
9/9							S	S-4	S	S-6	S-1	S-4		
9/10							1-2	5-9	1-8	7		5-11		
9/11							3-8	10-12	9-10	8-11	1-9	12-15		
9/12								12		11 on (sterile)				S-9
9/13													3-5	10-16
9/14										12 (sterile)			5-11	
9/15														
9/16	S													
9/17	1A-4													
9/18	5-6A													
9/21	7-9	S-2												
9/22		2-6	S-1A	S-8		S-11								
9/23			1A-2A	9-14	1A-3A									
9/24				12-14	3A									
Close-out Depth	170 cm*	115 cm**	120 cm	2 m	2 m	110 cm	155 cm	120 cm	170 cm	120 cm	190 cm	150 cm	185 cm	170 cm

Table 4-1
(continued)

LEVELS EXCAVATED BY TRENCH AND UNIT BY DAY

Date	Tr. 7 Unit 1	Tr. 7 Unit 2	Tr. 8 Unit 1	Tr. 8 Unit 2	Tr. 8A Unit 1	Tr. 8A Unit 2	Tr. 9 Unit 1	Tr. 9 Unit 2	Tr. 9 Unit 3	Tr. 10 Unit 1	Tr. 10 Unit 2	Tr. 11 Unit 1	Tr. 11 Unit 2	Tr. 12
9/12								S-1	S-7			S-9	S-1	
9/13							S-2	1-7	8-10				1-10	
9/14	S-6	S-4	S	S										
9/15		5-9A	S-2	S-2										
9/16	2A	9-11	3-10	3-6						S-6	S			
9/17	2A-9	12-17		7-14							S-10			
9/18														
9/21						S-8								
9/23														S-6
Close-out depth	2 m	180 cm	2 m	150 cm	180 cm	140 cm	1.1 m*	1 m*	1 m*	1 m*	1 m*	1 m	1 m	60 cm

Date	Tr. 13	Tr. 14	Tr. 15	Tr. 16	Tr. 17	Tr. 18
9/23	S-6	S-6	S-6	S-5	S-6	S-4
9/24				5-6		5-6
Close-out depth	60 cm	60 cm	60 cm	60 cm	60 cm	60 cm

S = started with surface clearing
* Still cultural at closing
** Cultural in NW corner at closing

On September 9, the crew met on-site with the COR and initial excavation locations were selected. To gain an initial assessment of site stratigraphy and project complexity, it was decided to begin with Trenches 4 and 5. It was determined that a contract modification was required to add excavation of an additional gabion anchor key structure, planned to be placed at the boundary between Sections B and C of the proposed gabion/fence complex. That modification was negotiated and added to the contract scope of work as Contract Unit 19; pending completion of negotiations, the COR and CGI agreed to excavate that location as Trench 3, using the same procedures as were to be employed in Contract Units 1-11. Excavations in Trenches 3 and 4 were closed when clearly sterile deposits were encountered and tested by deep trenching. Trench 5 proved to contain intact roomfill and wall, with floor-associated materials still in place. This was overlain by a rich cultural deposit produced by gradual slumping, soil flow, and soil-producing reworking of deposits originating within and uphill from the trench location.

The cultural deposits in Trench 5 overlay sterile deposits like those in Trenches 3 and 4.

Trenches 3, 4, and 5 were completed in sterile deposits on September 11 and 12; crews were progressively shifted to Trench 6 and Trenches 9 and 11 so as to assess the likelihood (in Trenches 6-10) of encountering more intact intramural deposits like those found in Trench 5 and also in order to evaluate the potential (in Trench 11) for complex exterior features like those reported from previous excavations in the South Ruin Complex eastern midden area. Partly slumped wall, floor, and roomfill deposits were found in Trench 6 with a stratigraphy otherwise like that of Trench 5. Trench 9 proved to contain stratified rich midden, which may have been either primary (i.e., intramural and/or extramural), or else redeposited from upslope. It was closed slightly below the contractual depth, still in cultural deposits. Trench 11 sampled only colluvial/alluvial deposits; the sandy fill contained, nonetheless, considerable cultural materials probably originating in middens known to lie upslope to the south and southwest.

Trenches 6, 9, and 11 were completed by September 14. Effort was then directed toward excavation of Trenches 7 and 8, using a modified excavation strategy designed to maximize separation of in-place fill from slumped deposits and based on the experience accumulated in the trenches already excavated. This strategy recovered relatively unmixed intramural deposits from both trenches. In Trench 7, intact floor features and multiple floors were successfully identified and sampled. Analogous deposits in Trench 8 were only partly intact and only a fragment of floor was identified. Both trenches were closed in sterile soils; Trench 7 was later tested to the contracted depth to obtain stratigraphic information on preoccupation deposits.

By September 16, work on Trenches 7 and 8 had progressed to the stage where crew could be released for excavation of Trench 10 and Trench 1 Unit 1. In Trench 1, the immediate goal was to sound the unknown local deposits to acquire depositional sequence data. These data were then to be used in designing field strategies for excavation of the remainder of Trench 1 and for the planned adjacent Trench 2, to be excavated in the second field session. The unit was placed over a suspected late-period exterior room corner so as to recover data from an exterior occupation surface and from the room and wall architecture. It developed

that only exterior fill was encountered, the actual wall lying somewhere nearby, but to the east.

September 18 was a short field day due to impending storms. Effort was directed toward completing records on excavated units, going as deeply as possible on the Trench 1 Unit 1 *sondage*, and installing temporary dams of backdirt, brush, and wallfall to protect open trenches. Trench 10 was closed at a depth a few centimeters below the contractual limit, still in cultural deposits. Trench 1 Unit 1 was closed for the weekend at a depth of 105 cm.

The second session began on September 21. On that day, Trench 1 Unit 1 was closed at 170 cm depth, 70 cm down into sterile or nearly sterile deposits. Trench 1 Unit 2 was opened, as was Trench 8A. Trench 8A was excavated using the methods developed in Trenches 5-7, with the refinement that the southern grid unit, Unit 2, was excavated separately in north and south halves once control was shifted to the horizontal mode. The trench was completed and closed, 30 cm into sterile deposits, at 140 cm depth. Intact, finely laminated cultural deposits were recovered; it is not clear whether these represent roomfill or confined exterior midden.

On September 22, effort was directed only at Trench 1 and the adjacent Trench 2. Contractually, Trench 2 was to have been placed parallel to Trench 1 and perpendicular to the Gabion Unit A wing anchor. However, an obvious midden filling a deep cut in the sterile clay substrate was found exposed in the erosional cutbank of Gallinas Creek immediately north of Trench 1. Recognition of this high-potential cultural deposit, possibly indicating a pithouse, old lateral arroyo cut, or water-control feature, led the COR and the Project Director to relocate Trench 2 along the alignment of the wing anchor so as to test the deposits, mitigate the anchor trench, and acquire stratigraphic data linking Trench 1 with the exposed arroyo cross-section. On September 22, work on Trench 2 Unit 1 was begun, Trench 2 Unit 3 was closed, Trench 1 Unit 2 was closed, and Trench 2 Unit 3 was opened.

On September 23, work in Trench 1 was concluded at sterile in Unit 3. Trench 1 proved to have sampled a fill composed of the preoccupation strata and surface, the occupation horizon, a post-abandonment colluvial/aeolian deposit which built up against the western wall of South Ruin Complex Structure 1N, and a capping deposit of wallfall representing the decomposition of Structure 1N. Work on Trench 2 Units 1 and 3 having defined the strata in that trench, the intervening Unit 2 was removed in natural stratigraphic units. Strata in Trench 2 Units 2 and 3 proved to be consistent with those observed in Trench 1, except that the midden deposit seen in the wash bank was present as fill in a pit or watercut intrusion in the whole of Unit 1 and the northwest quarter of Unit 2. Fill was extremely rich in bone, ceramics, and lithics, with counts per 0.1 cu m exceeding 250 items in several levels. Excavation of this deposit was not completed until September 24, when the wall of the old cut or pit was faced back to confirm the presence of sterile preoccupation strata within Trench 2 Unit 2.

On September 23, excavation of the east lateral wash check dam test pits (Trenches 12-18) began. These pits were contractually specified as being small, 0.6 m by 0.6 m maximum size and no more than 2 ft in depth. Consequently, an abbreviated excavation and recording

technique was employed because of limited working space. All units were completed by September 24. Only Trench 12, at the east end of check dam 1, was totally sterile; all other dam tests produced artifacts. Rich midden was encountered in Trench 18, at the west end of check dam 1. Tests on check dams 2, 3, and 4 revealed alluvial deposits of varying energy with artifactual inclusions. No definite features were found in any of the check dam tests.

4.4 METHODS

Field excavation methods evolved as the project progressed and as understanding of the deposits increased. Trenches were initially dug with shovel and trowel, in purely artificial 10 cm horizontal levels. Locational control was maintained relative to a separate datum for each trench, using line levels and tape measures. Where recognizable stratigraphic breaks were encountered within a level, efforts were made to excavate each stratum separately. In levels having substantial structural rock, all rocks of maximum dimension greater than 5 cm were stacked and a pooled weight for all rockfill was taken for each excavation level or sublevel, using a tripod scale accurate to 10 gm weight. Records were maintained using Level forms and Grid Map forms. Black-and-white photos were taken (Table 4-2).

Rocks and soil changes thought to represent alignments or contacts were mapped and pedestaled. All probable cultural soil was dry-screened through 1/4" hardware cloth; tests into sterile substrates were sample-screened at 50% intensity to verify sterility. Except for sterile substrate testing, excavations were concluded when artifacts were not encountered in two successive levels, when the contractual depth was exceeded, or when rodent disturbance was present in a clearly sterile matrix and artifact frequencies dropped substantially in successive levels, suggesting their presence only in burrow fill.

Units were laid out using square meter frames, plumb bob, and carpenter's level. Units were oriented perpendicular to the local slope, rather than to a general baseline. Early units were set up following instructions lettered on location stakes installed earlier by USFS personnel; later units were set with the USFS stake centered on the north trench margin. Vegetation was cleared and screened, removing the minimum vegetation necessary to permit work. Loose surface soil was removed over the entire unit as the surface level.

Beginning on September 12-13 with Trench 5, efforts were made to separate the surface slump stratum from underlying horizontal or gently dipping deposits. The changed procedure was implemented after it was discovered that the local soil dynamics had produced a deep and steeply dipping colluvial/solufluctive slump stratum with massive soil development and disturbance. This deposit overlay room fill and midden units, but generally was not easily distinguishable from those deposits except by its lack of horizontal bedding. To ensure successful separation of slump from in-place deposits, the slump stratum was removed in one or more 10 cm levels parallel with the soil surface. After each level was removed, the top of the next level was faced and inspected to see if horizontal strata had been exposed. If so, control reverted to horizontal levels. If not, another slump level was removed and facing and inspection were repeated.

Table 4-2

LIST OF FIELD RECORDS OBTAINED

Type	Coverage or Quantity
Film	4 rolls, B/W, 35 mm 24 exposure, undeveloped
Photo Record Sheets	all photos
Stratigraphic Profile Sheets	Trenches 1 through 11 1/
Field Specimen Forms	all artifacts and samples
Unit Level Records	all trenches 2/
Unit Level Grid Maps	all trenches 3/
Soil Swatches	all strata in Trenches 1-11 sprayed with fixative (on Strat Profile Sheets)
Trench Orientation Notes	Trenches 1-11 3/
Rough Transit Survey	3/, 4/
Field Notes on Decisions and Closure of Units	5/
Sample and Feature Forms	as needed

1/ Stratigraphy for Trenches 12-18 was recorded directly onto unit grid maps

2/ Level Records and Grid Maps were used interchangeably. Where data complexity warranted, both were completed.

3/ Orientations for Trenches 12-18 recorded relative to staked check dam centerline only. See unit level grid maps.

4/ Inaccurate. Better data were shot by USFS laser transit team.

5/ Summarized in report text.

This procedure worked rather well in Trenches 7, 8, and 10. In Trenches 6 and 8, the intramural deposits had generally slumped but were still distinguishable, resulting in natural strata neither horizontal nor conforming to surface slope. These strata have both in situ and slumped components, both of which could be distinguished from contacting strata and from the slump deposit proper. However, irregularities in the horizontal/slump contact led excavators to dig Trench 8A using a third strategy, in which slump and mix strata were dug as before, but in which mixed horizontal and genuinely horizontal strata were further separated by excavating the north and south halves of Trench 8A Unit 2 separately.

Whenever substrata or features were encountered, excavation pace was slowed and efforts were made to define the entity encountered. Samples of soil, pollen, and botanical concentrations were collected in situ where appropriate (clear soil changes, feature contexts, etc.). Additional macrobotanical remains were collected from screens as encountered. Soil and mineral samples were also collected from suspected ash, white clay, and springpipe gravel deposits for mineral analysis (see below). Floor fragments and in situ feature slabs were collected for pollen wash and compositional analysis.

Specialized recovery techniques were sometimes employed. These included wet-screening and field flotation of floor-context fill from Trench 7 Unit 2. Additionally, tests of the recovery value of 1/8" (under a 1/4" screen) screening was employed in all deposits where small debitage was noted in troweling or 1/4" screening. Only in rare cases was fine-screening more productive.

Items found in place were piece-plotted and bagged separately. Items found in screens were bagged by artifact or sample type, with counts tabulated for each bag. A field specimen catalog was maintained, and each artifact, artifact collection, or sample was assigned a unique field specimen number (e.g., FS 1, FS 2, etc.).

Bones, botanical specimens, artifacts having botanical analysis potential (cloudblowers, elbow pipes, etc.), and delicate or tiny specimens were packed in precrumpled aluminum foil in paper. In order to ensure adequate laboratory assessment of field artifact recognition, lithics from occasional levels were collected in "maximum mode"; that is, any object that might possibly be artifactual was collected. Most field specimens, however, represent those items thought artifactual by the collector. This procedure was instituted when (1) it was recognized that many artifacts from the site were probably made of the same materials as the walls themselves, (2) it was realized that the loamy soils coating most items made chipping scars, material types, and colors very hard to recognize in the field, and (3) it was noticed that collectors were not consistent in their judgements about items worthy of collection. It was thought likely that the maximum mode collections would include nonartifactual items. This issue was to be clarified by laboratory assessment.

As excavation proceeded, it was recognized that soil colors in many strata changed dramatically in response to small changes in soil moisture and ambient lighting. For this reason, it was decided to collect soil swatches for stratigraphic recordation purposes, rather than to follow the usual field recordation procedures using soil color charts. Soil samples were attached directly to stratigraphic profile records using smeared gluestick adhesive.

Later, these swatch samples were stabilized with Krylon brand 1306 artist's spray fixative. The swatches are a useful and compact method for retaining data on soil composition and color; all but the largest grain sizes and the purest clays adhered successfully.

4.5 FIELD OBSERVATIONS

This section will present commentary and field interpretations for all observations made during field work. The order of presentation for excavations is by field trench number.

4.5.1 General Observations

In the course of work at LA 1178, observations were made outside the trenches actually excavated. These are briefly summarized to provide a context for more detailed discussions of excavated areas.

In the area of the mouth of the lateral arroyo east of LA 1178 and along the adjacent wash cuts within Gallinas Creek, areas of rich, apparently unsorted midden are visible at or near the current stream grade of the creek. These lie stratigraphically at least 80 cm below the base of Trenches 12 and 18, and 50 cm below the apparent occupation level of the small roomblock lying just east of the arroyo. They may represent either in situ midden or redeposited slope slump. However, the presence of large stone artifacts, ceramics, cancellous bone, and large blocks of charcoal within a clay matrix strongly suggests that the deposits have not been reworked or density-sorted.

These observations, together with the stratigraphically obvious but unexplored occupation surface exposed by creek erosion of the small eastern roomblock only about 50 cm above stream grade, strongly suggest that the occupation-period stream grade of Gallinas Creek must lie buried at some depth below the current stream grade. Otherwise, density sorting of midden would have occurred, and the small roomblock would frequently have been at considerable risk from flashflood damage. Parallel observations were made in excavation.

Similar but less clearcut observations were also made in the area just west of the mouth of the westside bounding arroyo, upstream from Trenches 1 and 2. Unsorted rich midden was also present at or near present stream grade in the creekbank in this area.

A third area of rich midden was observed in the bank below the partly stabilized rooms exposed just upstream from Trench 3 in Gabion Section B. In this area, deep and rich midden lies either in place underneath the exposed room floors or else as unsorted slump deposits within cavate stream cuts later stabilized and currently being reexcavated by the creek. The former interpretation appears more likely, in which case the high Structure 1N roomblock overlies a considerable and rather earlier midden accumulation. Observations made in the course of both field school excavations appear to confirm this view.

Surface inspection of LA 1178, LA 1180, and the large ruins lying upstream (AR 03-03-03-329) and downstream (AR 03-03-03-02) from Gallinas Springs Ruin reveals that three of these sites have almost no surface artifact litter. An after-hours visit to the downstream large ruin by part of the crew revealed only one potsherd and some ten flakes found on the surface of the site area during approximately four person-hours spent inspecting the site. The circular or rectangular-oval upstream site exhibits a similarly limited surface assemblage except where it is being eroded by Gallinas Creek. Only the repeatedly excavated, potted, and eroded sections of LA 1178 have any significant surface artifact scatters. In contrast, LA 1180 is littered with sherds, flakes, and groundstone fragments in densities consistent with the subsurface richness known to be present in all the sites discussed.

The difference between LA 1180 and the other sites appears to be that LA 1180 is undergoing mild erosion, while the downstream site AR 03-03-03-02, the upstream site AR 03-03-03-329, most of LA 1178, and known or suspected low lying roomblocks just east and west of LA 1178 have all apparently experienced substantial post-abandonment deposition and little disturbance. These sites, some of which are among the largest architectural sites of this period in the highland Southwest, probably have surprisingly sparse surface assemblages because they have been extensively buried by alluvium.

It follows that surface-based architectural assessments of site and community plans, building sequences, and community size are unreliable. Small or low roomblocks and exterior areas may lie a meter or more below the surface of the conformal alluvial fans, benches, and slopes. If this conformal surface indeed represents a post-abandonment depositional event, then Gallinas Creek has undergone major cut-and-fill episodes since the sites were abandoned. Future work at Gallinas Springs Ruin should include appropriate geomorphological and hydrological evaluations of these observations, fuller understanding of which is crucial to site interpretation and study.

As has been noted by others (USFS 1987:4), only one spring is now known at Gallinas Springs despite the plural form of the name. That spring's source is unknown, as it was tapped long ago by a buried pipe which surfaces 50 m to the east of LA 1180. The pipe route has not been retraced. Possible anecdotal evidence supporting the view that multiple springs were once present at the site was obtained during fieldwork. Hosteen John Guerro, a minister now living at Alamo, visited the CGI crew at LA 1178. He reported that the site "has always been called Kin Tsiitsihl-toh" [House at springs having pottery] in the Puertocito-Alamo Diné. His stepdaughter, a resident of Canyoncito, added that the name would be Kin Tseetsihl·be·twah in the Canyoncito Diné dialect. When asked, both informants affirmed that the name connoted "more than one spring". Perhaps the hypothesized alluvial event occurred recently enough to be preserved in local Navajo folklore and place names; it may be that springs were buried by alluvation.

4.5.2 Suggested Research Topic: Preoccupation Landforms and Cultural Modifications

Much of the data recovered in this project could be used to further the analysis of preoccupation landforms and occupational modification of LA 1178. The suggestion of a different local depositional regime has been noted in a previous section. The prominent benches surrounding the site and the wide, aggrading, meandering Gallinas Creek have been suggested to be post-abandonment landforms. It has been hypothesized above that the stream grade was much lower during occupation.

If these speculations can be confirmed, research and management of Gallinas Springs Ruin and its neighboring sites must then be reoriented toward the likelihood that many small structural and nonstructural components of the local community are buried, as are many of the springs which probably were the motivation for pueblo establishment.

It is suggested that future research be directed toward answering questions of depositional sequences and landform reconstruction wherever possible. Geological studies, especially, should be designed to address these problems.

4.5.3 Research Topic: Occupational Sequence and Character

It was proposed that data from midden fill under and within rooms recovered in this project be used to begin reconstruction of the sequence and character of occupation of the site. Chronometric assessment of assemblages predating the northern component of Structure 3 was thought now to be possible. Dating and characterization of this occupational period has implications for geomorphological and hydrological reconstruction. Similarly, assessment of the age and character of the Trench 2 midden was expected to be potentially informative on questions of landform and hydrogeology.

Little is known of the occupational and constructional sequence of those portions of LA 1178 tested in this project. Ceramics and chronometric samples have been recovered which, it was hoped, would permit initial placement of the rooms and post-abandonment roomfill middens in Trenches 5-8A relative to the Structure 1/1N and pre-Structure 1 rooms upslope to the west. The wall alignments in Trenches 5-8A appear to be aligned inconsistently with nearby portions of Structure 3 exposed just upslope to the south, but to agree in alignment with more central portions of Structure 3. Data on the history of construction of Structure 3 may therefore be derivable from the results of this project (refer back to Figure 4-1).

Chapter 5

LABORATORY AND ANALYTICAL METHODS

by Jack B. Bertram

5.1 INTRODUCTION

At the conclusion of the 1987 fieldwork carried out by CGI under the earlier of two FS contracts, all materials and notes were accessioned and a dBase III database was prepared which contained images of all bag labels and field specimen sheets, together with the author's annotations regarding potential value for special analysis of each field specimen group. All materials were then turned over for curation to Cibola NF in 1987.

When the CGI bid for the subsequent analysis and report contract was successful, these materials were removed from storage and turned back over to CGI. The materials were immediately inventoried. With one exception, all specimens, samples, and documents were present and in the same condition as in 1987. The one exception was a pollen sample (FS 535) collected from Feature 3.1 (roomfill?) in Trench 6 Unit 2 Level 8. This sample had been damaged and contaminated by rodents; it was discarded.

5.2 DATING

In view of the high priority of achieving accurate dates for the FS/CGI assemblages, it was felt by the project director and COR that all suitable dendrochronological samples should be submitted promptly for dating; this concern was made an explicit term of the project contract. In the interest of compliance, CGI submitted all samples of charcoal which appeared to exhibit more than 10 rings to Holloway, the project ethnobotanist, for initial screening. Holloway, in consultation with the Tree-Ring Laboratory, concluded that no sample with less than 30 rings merited submission; he could find no otherwise acceptable specimens with more than about 25 rings. Consequently, no dendro samples were submitted for dating. Rather the <u>outer rings</u> of selected (apparent near-bark) conifer samples were removed and submitted to Beta Analytic for radiocarbon dating. All other charcoal was conserved for use should more refined techniques become available. The radiocarbon specimens were examined for rootlet and dirt contamination; the contaminants were removed before submission.

5.3 ARTIFACT AND SPECIMEN PROCESSING

All artifacts of ceramic and of stone were washed, except for a) those which had been specifically reserved from washing on account of their suspected value for pollen or mineral studies, b) bone items, and c) any items discovered in the course of washing which appeared to have macrobotanical, resin, or mineral adhesions.

Bones were not routinely washed. Rather, they were usually dry-brushed. Spot-rinsing was done only when questionable marks or patterns suggested that adhering soil might be obscuring cut marks, gnawing marks, breakage patterns, working, or thermal modification. An effort was made to keep excavation matrix intact on at least a portion of every bone.

5.4 OBSIDIAN

A wide range of visually different obsidian materials were present in the FS/CGI collections. In light of the author's recent experience in the area, (Bertram, et al. 1989) which had indicated that a high proportion of these probably could not be sourced or, if sourced, could not be assigned good hydration rate constants, no obsidian hydration analysis was performed. Rather, at the author's request, Hoagland performed a visual presort of obsidians into visually distinct types; samples from these types were then submitted to trace chemical assay and source determination. The results are summarized in Chapter 7 and commented upon in Chapter 6.

5.5 MACROBOTANICAL

At the request of Holloway, selected soil samples were processed by Oakes using standard water floatation methods, with full recovery of light and heavy fractions and with retention of all materials other than objects of less than 0.3 mm diameter. All retained fractions were further graded after drying by gentle screening through 1/4" mesh, 1/8" mesh, window screen at 20 mesh (1.3 mm), and lightly stretched pantyhose scraps (effective mesh 0.33 mm). These separate grades were individually packed, labeled, and submitted for Holloway's examination.

5.6 PROVENIENCE MAINTENANCE

All basic provenience divisions (Field Specimen numbers, etc.) devised in the field were maintained throughout artifact and sample analyses; no originally separate samples or collections were ever pooled. The collections were kept under the direct control of CGI or of CGI consultants at all times, with one exception.

At the author's request, permission was given by Cibola NF to transport a portion of the ceramic assemblage for display and discussion at the New Mexico Archaeological Council Ceramic Workshop held in Silver City, New Mexico on 27-29 October, 1989 in a presentation given by Gomolak, assisted by Knight and by the author. The items to be taken to the workshop were first inventoried; a second inventory after the workshop ended showed that no items had been lost or mislaid.

5.7 POOLING FOR ANALYSIS

After preliminary lithic, ceramic, and faunal scans had been completed, the analysis of deposits for analytical pooling was undertaken. Data listings for various artifact classes were first classified according to the stratum or combination of strata (i.e., the mixed cases) from which they had been drawn. Vertically adjacent strata sets were then scrutinized to determine if they appeared to differ importantly in richness or in composition of their various subassemblages. Wherever differences in composition were evident only in absolute richness (simple counts), these were ignored, but wherever proportional representation of different ceramic types, faunal taxa, or lithic material types appeared to be pronounced, a preliminary division of the column into analytical units was made, unless stratigraphic data clearly indicated the presence of badly disturbed deposits or of steeply sloping strata. No statistical tests were performed to assess the potential validity of these preliminary divisions.

The preliminary analytical units were then examined to determine if each analytical group still retained a rich-enough assemblage to allow statistical comparison with the adjacent substrate and superstrate deposits.

In a few cases, apparently distinct adjacent deposits were pooled. This was done either because the evident distinctions were based on so few items that the distinctions were of suspect import, or else because the deposits had been badly separated due to excavation errors and were therefore (in effect) already inextricably mixed.

Finally, extremely rich but apparently homogeneous deposits (e.g., the Trench 2 midden) were arbitrarily broken into a vertical sequence of poolsets; the deposits in question were so rich that they could be split up to produce several stratigraphically more limited, analytical units of which each was by itself rich enough to support analysis.

The resulting poolsets (Table 5-1) were used by the author in distributional studies of ceramics and bone. Hoagland elected to lump some poolsets for his own lithic analysis purposes (see Chapter 7 for his explanation and refer again to Table 5-1 for correlation between the author's and Hoagland's analytical poolings).

Table 5-1

POOLINGS AND PROVENIENCES - LA 1178

TRENCH	STRATUM LEVEL	UNIT . LEVELS	FS NUMBERS	HOAGLAND'S POOL CODES	POOL CODE
1	Post Abandonment	1.1A, 2.1A	901, 902, 922-924	1.1	91
	Late Use Surface	1.2A, 2.2, 3.1	903-907, 925-927, 935-938	1.2	92
	Early Use Surface	1.3, 1.4, 2.3, 2.4, 3.2	908-914, 928-931, 939-943	1.2	93
	Pre-occupation	1.5 - 1.9, 2.5, 2.6, 3.3	915-921, 932-934	1.2	94
2	Post Abandonment	1.1, 1.2, 2.1A, 3.1, 3.2	1101-1102, 1107-1108, 1173-1175	2.1	111
	Occupation Surface	1.3, 1.4, 2.2, 2.3, 3.3 - 3.6	1103-1106, 1109-1116, 1124-1126, 1176-1178	2.2	112
	Upper Rich Midden	1.5 - 1.7	1117-1123, 1130-1133, 1137-1140	2.3	113
	Middle Rich Midden - Upper half	1.8 - 1.09	1144-1150	2.3	114
	Middle Rich Midden - Lower half	1.10 - 1.11	1151-1160	2.4	119
	Lower Rich Midden	1.12 - 1.14	1161-1172	2.5	115
	Pre-occupation	2.41 - 2.43, 3.7 - 3.11	1127-1129, 1134-1136, 1141-1143	2.6	116
	Midden in Unit 2	2.3A	1179-1181		117
3	Slump	1.1 - 1.4, 2.1 - 2.4, 1.7 - 1.8	001-013, 039-042, 046-049, 057-059, 066-070	3.1	1
	Slump/Midden Mix	1.5, 1.6, 2.5, 2.6, 2.7	014-025, 060-065	3.1	2
	Upper Midden	2.5A, 2.6A, 2.7A, 2.8 - 2.10	026-038, 043-045, 050-056	3.2	3
	Lower Midden (below 100 cbs)	2.11 - 2.13	071-078, 1601, 1602, 1606	3.2	4
4	Slump	All Unit 1, 2.1 - 2.4	101-109, 121-151	4.1	11
	Slump + Stratum 2 Mix	2.5, 2.6	110-116	4.2	12
	Slump + Strata 3,4 Mix	2.7, 2.8	117-120, 152-156	4.2	13
	Stratum 4	2.9 - 2.12	157-165	4.2	14

Table 5-1
(continued)
POOLINGS AND PROVENIENCES - LA 1178

TRENCH	STRATUM LEVEL	UNIT . LEVELS	FS NUMBERS	HOAGLAND'S POOL CODES	POOL CODE
5	Slump	All Unit 1, 2.1 - 2.7	201-218, 240-253	5.1	21
	Slump + Room Fill Mix (+ 2nd story fill)	2.8 - 2.10	219-233	5.1	22
	Floor Fill and Floor	2.11, 2.12 to 115 cmbs	234-239, 255-257	5.2	23
	Subfloor and Lower Floor Feature 1.1A Mix	2.12 lower	254, 262-263	5.2	24
	Subfloor	2.13 - 2.15	258-261, 264	5.2	25
6	Slump	Most of Unit 1, 2.1 - 2.5	501-513, 559-561, 567-573	6.1	51
	Slump + Room Fill Mix	2.6, 2.7	514-519, 552-556, 576-585	6.1	52
	Room Fill	2.8 general, 2.9 general	520-525	6.2	53
	Mixed Room Feature 3 Floor and Fill	East ½ of 2.9 - 2.11, some 2.12	530-531, 542-543, 547-548	6.2	54
	Mixed Room Feature 4 Floor and Fill	West ½ of 2.9 - 2.11, some 2.12	526-529, 532-541, 544-546	6.2	55
	Mixed Floors and Subfloor Midden	Remainder of 2.12 - 2.16	549-551, 557-558, 562-566, 574-575, 586-587		56
7	Slump	All Unit 1, 2.1 - 2.4, 2.5, 2.5A, 2.6A	601-623, 652-654, 675-682	7.1	61
	Upper Room Fill	2.6	624-628	7.1	62
	Floor Fill and Floor	2.7, 2.7A, Feature 5.2 Firebox (firebox pertains to earlier floor paving episode)	629-646, 667-671	7.1	63
	Subfloor	2.8 - 2.10 except Feature 5.2	647-651, 655-666, 672-674, 683-686	7.2	64

Table 5-1
(continued)
POOLINGS AND PROVENIENCES - LA 1178

TRENCH	STRATUM LEVEL	UNIT . LEVELS	FS NUMBERS	HOAGLAND'S POOL CODES	POOL CODE
8	Slump	1.1 - 1.3, 2.1 - 2.4	701-728, 756-760, 778-780, 2706	8.1	71
	Slump/Room Fill Mix	1.4, 2.5	729-731, 761-763	8.1	72
	Room Fill, Floor Fill Mix	1.5, 2.6, 2.7	732-736, 764-771	8.2	73
	Floor Fill, Floor	1.6, 2.8	737-739, 744-746, 772-777, 1603	8.2	74
	Floor (approx)	1.7, 2.9	740-743, 781-786, 2705	8.3	75
	Subfloor Upper Midden	1.8 - 1.10, 2.10 - 2.11	747-755, 787-793	8.4	76
	Subfloor Mixed Midden	2.12	794-797	8.4	77
	Oldest Midden	2.13 - 2.14	798-800, 2701-2704	8.4	78
8A	Slump	All of Unit 1, 2.1, 2.2S, 2.3S, 2.6N - 2.9N, All 2.10 - 2.12	1001-1038, 1051-1060	8A.1	101
	Upper Midden	2.4S, 2.5S, 2.6S	1039-1045	8A.2	102
	Lower Midden	2.7S, 2.8S	1046-1050	8A.2	103
9	Slump	1.1, 1.2, 2.1, 2.2, 3.1, 3.2, 3.3	301-316, 348-351, (363-365?)	9.1	31
	Slump, Midden #1 Mix	2.3, 3.4	317-319, 320-322, 328-335, 339, (366-368?)	9.1	32
	Midden #1	3.5	340-343, (369-371?), (375-376)	9.2	33
	Midden #2	3.6	352-354, 360-362, (372-374?)	9.2	34
	Midden #3	2.4, 3.7	323-327, 377-381	9.2	35
	Midden #4	2.5, 3.8	336-338, 382-390	9.2	36
	Midden #5	2.6, 3.9	344-347, 391-394	9.3	37
	Midden #6	2.7, 3.10	355-359, 395-400, 1604	9.3	38

Table 5-1
(continued)
POOLINGS AND PROVENIENCES - LA 1178

TRENCH	STRATUM LEVEL	UNIT . LEVELS	FS NUMBERS	HOAGLAND'S POOL CODES	POOL CODE
10	Slump	1.1 - 1.4, 2.1 - 2.7 slump	801-814, 821-849, 864	10.1	81
	Midden	1.5 - 1.6, 2.7 - 2.10	815-820, 850-863, 865-866	10.2	82
11	All	All	All 400s	-	41
12, 13, 14, 15, 16, 17, 18	Pool all. Comment in text on clear differences		All 1500s, 1605	-	151

5.8 INDIVIDUAL ANALYSIS METHODS

Specific and technical details of the approaches employed by individual analysts are discussed in the pertinent chapter or appendix. All such details, if significant, were approved in discussion between the analyst and the author and/or the Principal Investigator.

5.9 FINAL DISPOSITION OF COLLECTIONS

Note: this section will specify final curation locations of all FS/CGI materials. It will be written in consultation with FS after the request by Gomolak and Knight to Cibola NF for accessible curation of their type sherds at the Laboratory of Anthropology sherd comparison room in Santa Fe has been approved, rejected, or modified by FS.

Chapter 6

OBSERVATIONS AND INTERPRETATIONS

by Jack B. Bertram

6.1 INTRODUCTION

In describing the little one can learn from relatively minor excavations into the edge of a major site like LA 1178, one is placed in a stylistic quandary. It is possible to present first the analyses of artifact classes (sherds, lithics, bones, radiocarbon, etc.) and follow by putting these into stratigraphic context. Alternatively, one may first describe the strata and features in isolation, and then discuss the associated artifactual materials.

Either way, one's text rapidly becomes peppered with forward citations and references to analyses not yet presented; this last, the author is told, is a no-no.

In this chapter, neither approach is followed. The observations and interpretations of the author and his field team are presented in the order of deposition of the archaeological strata encountered. Where useful, forward references are made <u>but not cited</u>; the alternative of many "see Chapter 9" statements is simply too disruptive to be tolerated. Let the reader be assured that all geomorphological and faunal interpretations are the author's based on the field team's depositional observations and on the author's later extension of these. All botanical statements are Holloway's (Appendix A), all lithic assessments are Hoagland's (Chapter 7), and all ceramic data are from Gomolak and Knight (Chapter 8), or from Hill (Appendix E). Hill also did the mineralogy (Appendix D). Radiocarbon and obsidian studies are discussed in Hoagland's chapter and in this chapter, drawing on the primary work by the ENMU lab (Appendix C) and by Beta Analytic (Appendix B). The author's aim is to build an interpretive context for understanding the geomorphology, depositional history, and site dissolution processes which have affected LA 1178, and which, of course, led to the need for stabilization and mitigation in the first place. Clearly, the objectives of this report must include not only interpretations of field and analytical observations (as far as this is possible) but also the presentation of data for the future researcher who digs more than a few trenches at this important site.

These interpretations hinge on some frankly speculative amateur geomorphological analysis. The author is no more a qualified geomorphologist than Magdalena Black-on-white is Mesa Verde, but he was available. The need for some geomorphological basis of understanding in what follows will, he hopes, become obvious in the following text, which is presented in trench order, proceeding more-or-less clockwise around three flanks of the huge mass that is LA 1178.

6.2 TRENCH 1

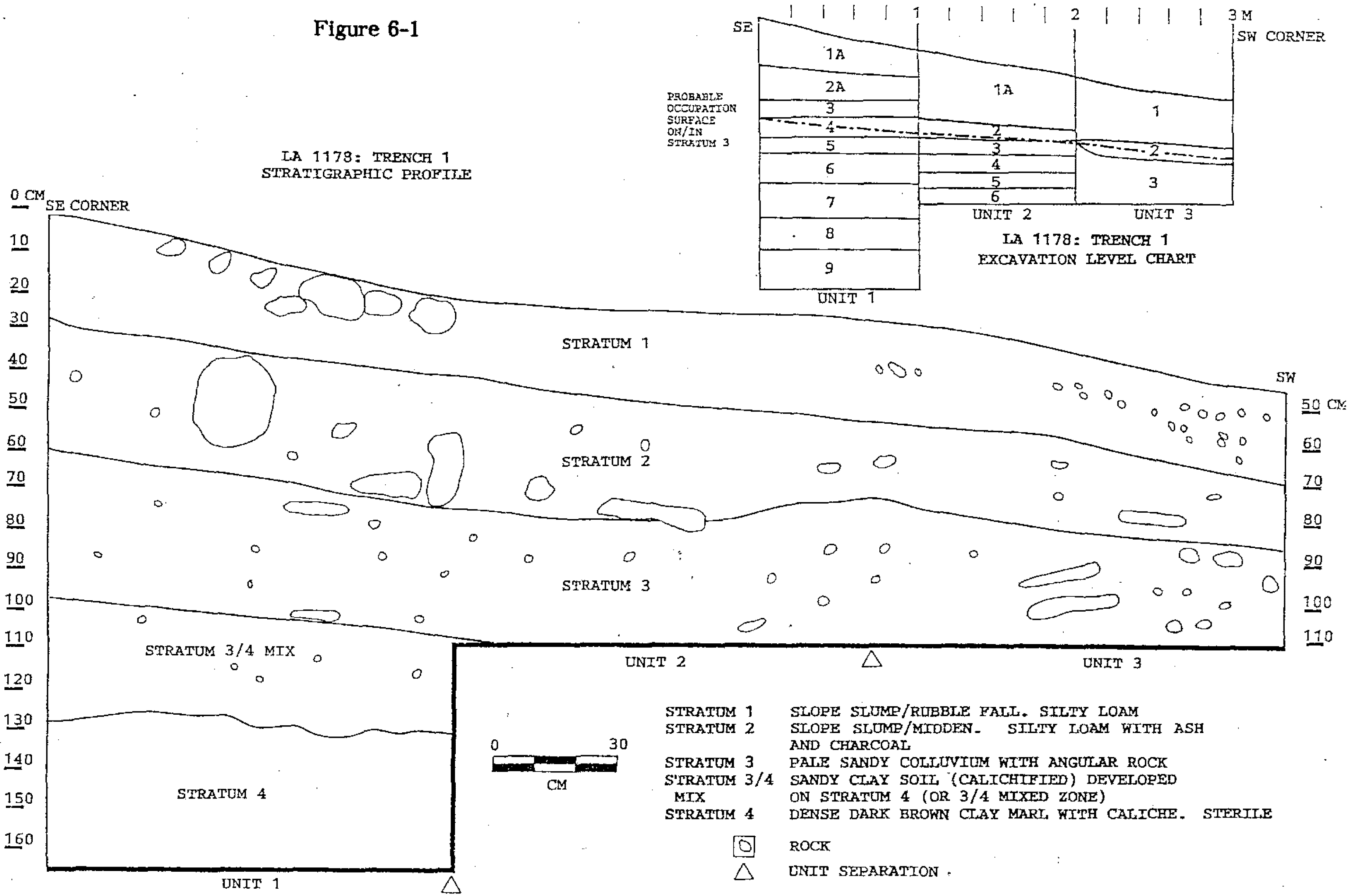
Trench 1 (1 x 3 m) was placed on the edge of the alluvial bench immediately outside the apparent northwest corner of Structure 1N. The trench was oriented at 289°30' to run along the anticipated axis of the west end head-cut double fence structure; the trench was excavated to mitigate damage that might be caused by installation of the east anchor of the head-cut structure. Trench 1 Unit 1, the easternmost unit of this trench, was excavated first in arbitrary levels. It ultimately reached a depth of 170 cm below surface (20 cm down into sterile deposits) at which point excavation in this unit was terminated. Trench 1 Unit 2 was then excavated to sterile deposits in arbitrary levels. Using the stratigraphic trends visible in Units 1 and 2, Unit 3 was then excavated to sterile in natural stratigraphic levels.

The base stratum encountered in Trench 1 (Figure 6-1) was a dense, dark brown clay deposit (Stratum 4). The surface of this deposit, which sloped gently to the west-northwest, was poorly defined. Its upper 30 cm graded into the sandy clay loam colluvial deposit which was recognized as Stratum 3. The gradational zone (Stratum 3/4) was distinctly darker than Stratum 3, but its uppermost portion was not obviously different in sand/loam/clay proportions or grain size. It probably represents an old soil surface developed on the Stratum 4 clay bank. Stratum 4 was culturally sterile, and Stratum 3/4 seemed to be sterile except for rodent intrusions. Stratum 3, however, contained a few artifacts and also small quantities of what may be structural rubble. Artifact content was greatest in the upper 1 to 2 cm of Stratum 3 and in Stratum 2, a charcoal-stained colluvial sandy loam. Stratum 2 contained significant amounts of probably structural rubble. Stratum 1, which overlay Stratum 2 along a clear contact surface, was compositionally very like Stratum 2, except that it had a much lower ash and charcoal concentration and a significantly lower artifact density.

Clast and rock orientations in Stratum 3 and along the Stratum 2/3 contact were horizontal. Orientations within Strata 1 and 2, in contrast, seemed random. The remains of either articulated wall fall elements or of rather ephemeral dry-laid masonry terraces or walls were encountered in Strata 1-3; these all appeared as poorly defined alignments oriented variably to the west or southwest (i.e., along the slope). No floor surface, footer trenches, definite foundations, nor other indications of in-place structural remains were found.

Trench 1 may have contained possibly disarticulated wall alignments or partly articulated wallfall. Lithics from this trench were sparse, and they differed in composition from the general assemblage only in the frequency of rarer items (probably ascribable to sampling effects). Ceramics from this trench included an Arenal Glaze Polychrome rim (very late) from considerable depth, raising the possibility that most of the deposit sequence in this trench is post-abandonment in age.

Figure 6-1



LA 1178: TRENCH 1
STRATIGRAPHIC PROFILE
0 CM
SE CORNER
SW
50 CM
STRATUM 1
STRATUM 2
STRATUM 3
STRATUM 3/4 MIX
STRATUM 4
UNIT 1
UNIT 2
UNIT 3
0 30
CM
LA 1178: TRENCH 1
EXCAVATION LEVEL CHART
SE
SW CORNER
3 M
PROBABLE OCCUPATION SURFACE ON/IN STRATUM 3
STRATUM 1 SLOPE SLUMP/RUBBLE FALL. SILTY LOAM
STRATUM 2 SLOPE SLUMP/MIDDEN. SILTY LOAM WITH ASH AND CHARCOAL
STRATUM 3 PALE SANDY COLLUVIUM WITH ANGULAR ROCK
STRATUM 3/4 MIX SANDY CLAY SOIL (CALICHIFIED) DEVELOPED ON STRATUM 4 (OR 3/4 MIXED ZONE)
STRATUM 4 DENSE DARK BROWN CLAY MARL WITH CALICHE. STERILE
ROCK
UNIT SEPARATION

Trench 1 produced only one analyzable macrobotanical specimen, a piñon cone from preoccupation strata. No potential dendro or radiocarbon samples were recovered. No obsidian samples were submitted, nor were any samples subjected to mineral or thin-section studies.

6.3 TRENCH 2

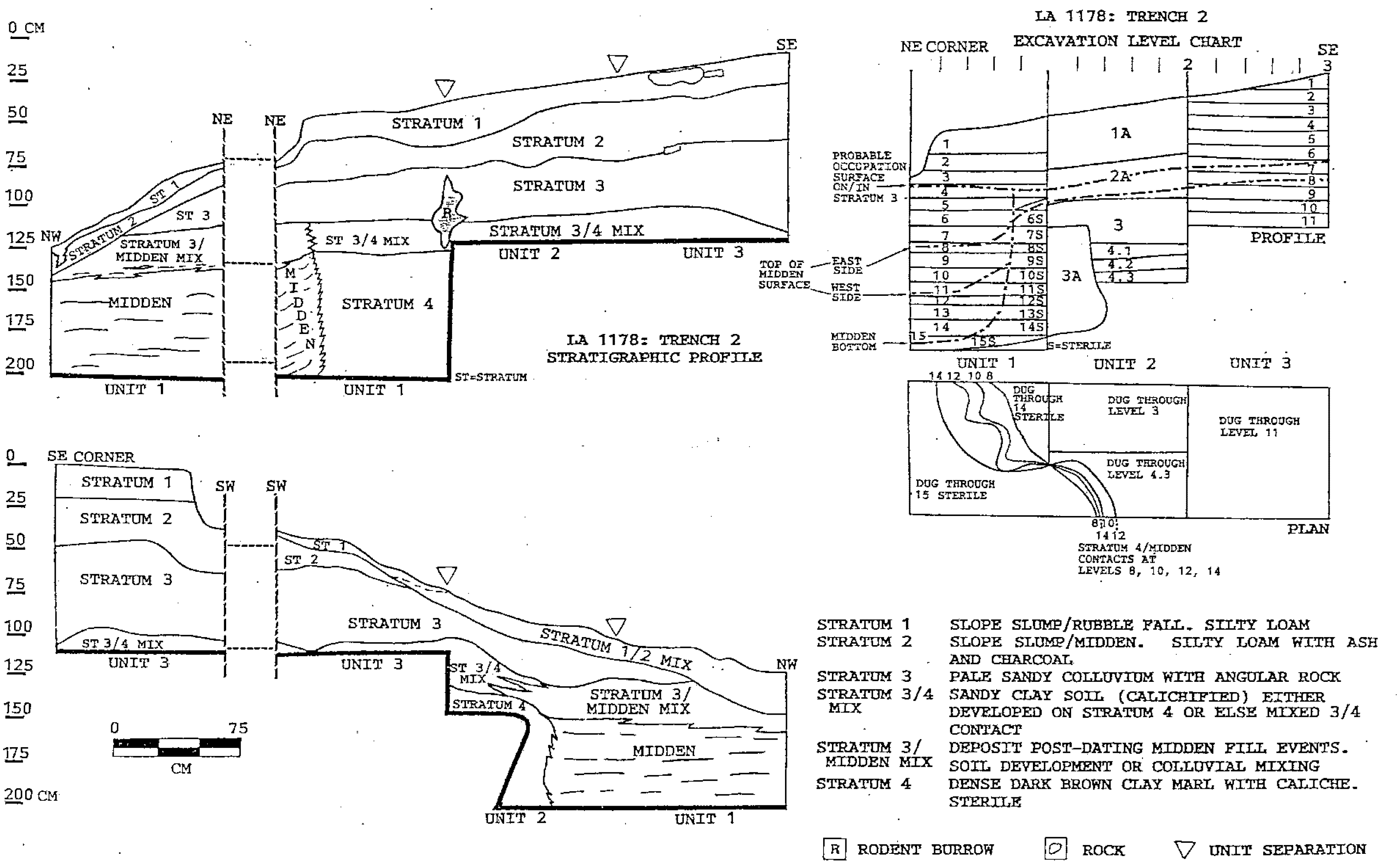
Contractually, Trench 2 (1 x 3 m) was to have been placed west-northwest of and in line with Trench 1. However, in the course of excavation of Trench 1, the field director noticed that an extremely rich midden deposit was visible in the south wall of Gallinas Creek, immediately to the north of Trench 1. Cursory creekwall facing by the field director and the COR indicated that no deposits of comparably high data potential were likely to be found in the vicinity of the westernmost head-cut structure anchor. For this reason, the field director and COR agreed to relocate Trench 2 to the rich midden deposit so that it would mitigate possible impact caused by the installation of the upstream anchor (Section A) of the main gabion structure. The trench was oriented at 20° to run along the anticipated axis of the main gabion anchor structure.

Unit 1 (the northernmost unit) and Unit 3 (the southernmost unit) were excavated simultaneously. Unit 3, dug to a depth of 1.10 m below datum, encountered a stratigraphic sequence completely comparable to that recorded in Trench 1 (see Figure 6-2). Unit 1 also encountered the same stratigraphy in upper levels (Strata 1-3), but deeper levels were unlike any found in Trench 1. Within Unit 1, the Strata 3/4 mix layer graded horizontally into an artifactually rich deposit having copious ash and charcoal. As excavation proceeded through Stratum 3/4, the density and richness of artifactual materials steadily increased until a clear break was defined between a finely laminated rich midden (in the north and west portions of the unit) and the sterile Stratum 4 substrate deposit (in the southeast corner of the unit). The midden was found to extend down beyond a depth of 2 m below datum (0.75 to 1.50 m below surface), at which point excavation was terminated.

Unit 2 was excavated after completion of Units 1 and 3. In Unit 2, excavation encountered the complete Trench 1 stratigraphic sequence, including Stratum 4. The margins of the midden were found to extend back into the northwest corner of Unit 2 for up to 0.4 m distance. The midden in Unit 2, as in Unit 1, was found to lie within a pit or arroyo that had been cut vertically (and even undercut in places) down into the Stratum 4 sterile substrate.

The midden deposits in Units 1 and 2 were found to be very finely laminated, with distinguishable laminae being typically only a few millimeters thicker in section. The contact of the midden deposit and the sterile substrate clay was finely feathered. This indicates that the midden accreted rather rapidly, but over a period of time long enough for 20 or more runoff events to produce wash feathers or fillets of clay along the pit/arroyo margin. This observation may indicate that the midden accreted over a span of only one or a few years.

Figure 6-2



LA 1178: TRENCH 2
EXCAVATION LEVEL CHART
NE CORNER
SE
1A
2A
3
3A
PROFILE
PROBABLE OCCUPATION SURFACE ON/IN STRATUM 3
TOP OF MIDDEN SURFACE
EAST SIDE
WEST SIDE
MIDDEN BOTTOM
S=STERILE
UNIT 1
UNIT 2
UNIT 3
DUG THROUGH 14 STERILE
DUG THROUGH LEVEL 3
DUG THROUGH LEVEL 11
DUG THROUGH LEVEL 4.3
DUG THROUGH 15 STERILE
PLAN
STRATUM 4/MIDDEN CONTACTS AT LEVELS 8, 10, 12, 14
LA 1178: TRENCH 2
STRATIGRAPHIC PROFILE
STRATUM 1
STRATUM 2
STRATUM 3
STRATUM 3/4 MIX
STRATUM 4
STRATUM 3/ MIDDEN MIX
STRATUM 1/2 MIX
MIDDEN
ST=STRATUM
SE CORNER
0 CM
200 CM
CM
STRATUM 1 SLOPE SLUMP/RUBBLE FALL. SILTY LOAM
STRATUM 2 SLOPE SLUMP/MIDDEN. SILTY LOAM WITH ASH AND CHARCOAL
STRATUM 3 PALE SANDY COLLUVIUM WITH ANGULAR ROCK
STRATUM 3/4 MIX SANDY CLAY SOIL (CALICHIFIED) EITHER DEVELOPED ON STRATUM 4 OR ELSE MIXED 3/4 CONTACT
STRATUM 3/ MIDDEN MIX DEPOSIT POST-DATING MIDDEN FILL EVENTS. SOIL DEVELOPMENT OR COLLUVIAL MIXING
STRATUM 4 DENSE DARK BROWN CLAY MARL WITH CALICHE. STERILE
R RODENT BURROW
ROCK
UNIT SEPARATION

Laminations within the body of the midden were almost horizontal indicating that the accreting midden deposit may have been constrained by a dam, revetment, or terrace downslope. If such a structure was present, it has been lost to erosion, as the midden clearly extends uninterrupted all the way north to its exposure in the present creek bank.

The contacts between the 3/4 mix stratum, the midden, and Stratum 3 indicate that the deposition of Stratum 3 postdated the deposition of the midden, but it would appear that at least the lower part of the 3/4 mix stratum was present during midden deposition. This would imply that the midden deposit may be somewhat earlier than the Trench 1 use surface, the presence of which was inferred on the basis of rubble dip measurements and heightened artifact concentrations observed in the upper part of Trench 1 Stratum 3 and along the Trench 1 Stratum 2/3 contact zone.

In Trench 2 were found a high proportion of the small "ornamental" bird bones and an unusually low proportion of Grants obsidian relative to other loci.

The only apparently early sherd from the site, a single Mimbres Black-on-white-like piece, came from the upper midden in Trench 2. It was made on a Tularosa paste and may, therefore, not be Mimbreño at all. All decorated wares were rare here, but decorated tradewares were relatively more common than elsewhere. The 20 Magdalena whiteware, four Magdalena redware, six Socorro Black-on-white, two Casa Colorado Black-on-white, five Tularosa Black-on-white, four exotic corrugated utilities, one Cebolleta Black-on-white, one "non-Magdalena" whiteware, three White Mountain Redware, and the "Tularosa Mimbreño" sherd were all overshadowed in abundance by the 298 Magdalena utility sherds.

Most (except for incised sherds in Trenches 6 and 7, and a Black-on-white/corrugated sherd in Trench 10) of the incised and unusual utility/decorated pottery from the site also came from here: one Magdalena plain incised, three Magdalena diagonal incised corrugated, one Magdalena Red-slip corrugated, and one Potsui'i-like incised sherd.

Excluding the El Paso potdrop in Trench 8A, nowhere else was such a high proportion of incised or decorated nonutility exotics encountered (20 exotic vs. 29 Magdalena).

There may be a trend also in exotic presence within the stratigraphic column of the apparently primary rich midden deposits. Casa Colorado, "Mimbreño Tularosa", and Tularosa are present mostly above Socorro and Cebolleta types. This trend is probably not significant, due to the low counts per level for these types.

Trench 2 produced no definite intramural deposits, so it was judged that pollen samples from this trench would probably prove to have been severely contaminated by pollen rains. Consequently, no pollen samples from Trench 2 were submitted for analysis. A wide range of charcoals were recovered. Species included *Populus*, *Pinus* (2 species?), and *Juniperus*. No radiocarbon or dendro samples were submitted. The obsidian submissions from FS 1144, 1156, and 1168 sourced as Jemez, Beaver Creek, and San Antonio/No Agua, strongly suggesting that local sources as yet unknown to the ENMU lab are chemically very similar to the Beaver Creek and San Antonio sources. These may be the same as the elusive

Tularosa Basin source encountered in previous studies (see discussion in Bertram, et al. 1989). A thin-section sherd of mineral-paint whiteware (FS 1138) was found to be made on undiagnostic Cibola paste.

Mineral samples from Trench 2 included a yellow jarosite crayon (FS 1160), an amalgam of hematite and kaolinite which probably could have made a satisfactory red ceramic slip or red paint component (FS 1169), and a problematic sample which is still under study (FS 1165). This last sample, tentatively identified as hematite by the author, was identified as hematite by Weber, but as tellurobismuthite by McMillan (Appendix D). This very unusual mineral, often associated with gold, is reported only from one location in far southwestern New Mexico. Weber, McMillan, and Hill consulted other specialists and judged that further analyses were in order. The results of these analyses indicated that the specimen was indeed an iron-rich mineral. The apparently spurious tellurobismuthite identification remains unexplained at this writing. Its lack of validity does not, in the author's judgement, suggest that McMillan's other identifications are suspect; her other analysis runs typically produced much more clear-cut results.

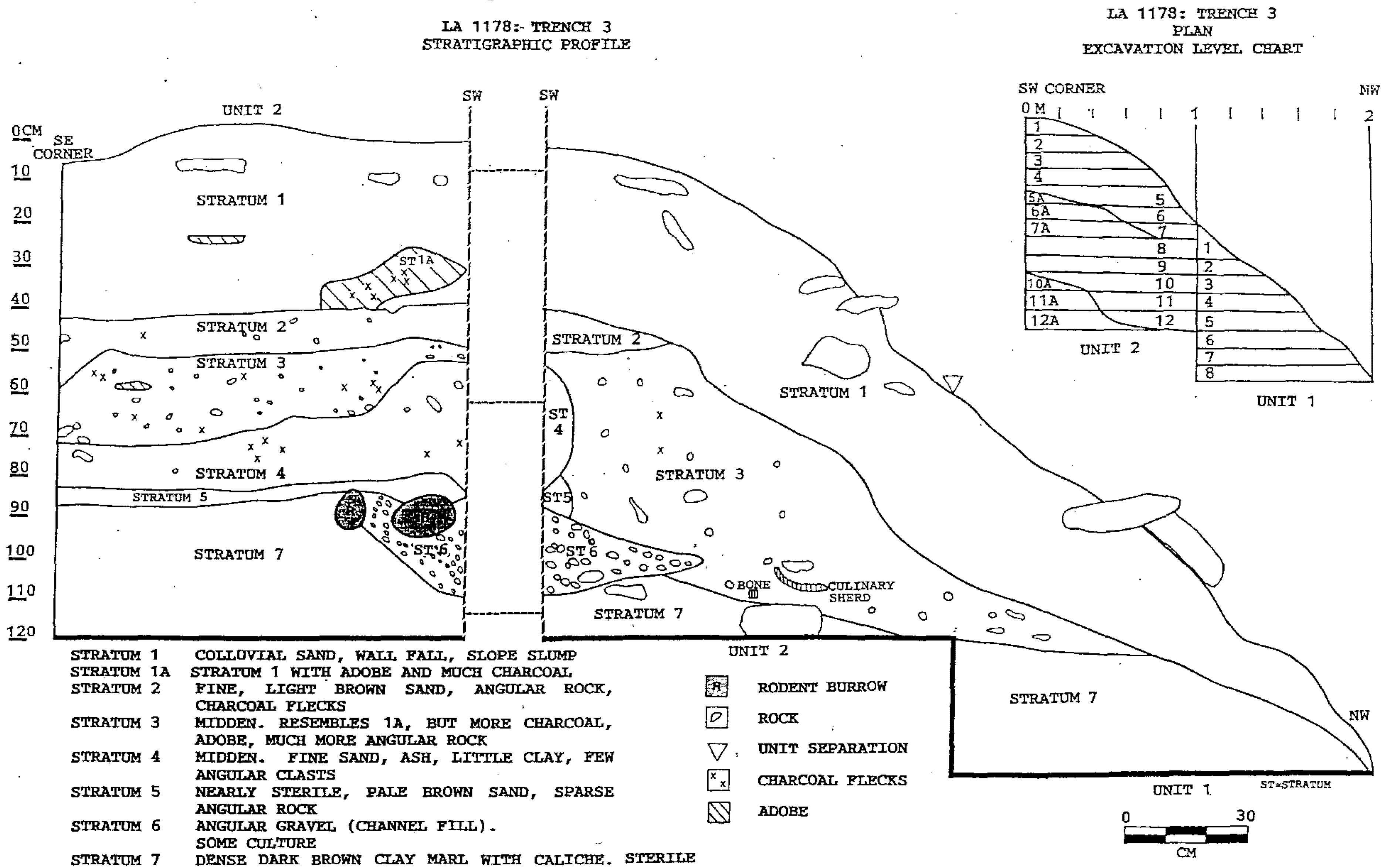
6.4 TRENCH 3

This trench (1 x 2 m; oriented at 350°30'), excavated on the Gabion Section B/C boundary along the south wall of Gallinas Arroyo, was expected to reveal only recent slope slump over bedrock. To our surprise, it produced 40 cm of slope slump cultural deposit overlying 40 cm of exterior midden or partly slumped roomfill (see Figure 6-3). This midden overlay a massive sterile claybank, Stratum 7, which is probably continuous with the clay deposit exposed below the Structure 1N eroding rooms. The surface of this clay deposit was cut by channel fill deposits composed of angular clasts (Stratum 6).

Above the channel fill and clay basement deposits were two horizontally bedded strata: a lower layer of sand with sparse angular clasts (Stratum 5), overlain by a shallow midden layer or streamwash deposit composed of finer sand and ash (Stratum 4). It would appear that all of these deposits were then truncated by a stream erosion event, so that only a remnant face was encountered near the south of Unit 2. Both strata appear to be extramural deposits.

After the erosional truncation of Strata 4/6, extramural midden deposition was renewed, resulting in the formation of Stratum 3, a sandy colluvium with abundant cultural inclusions, ash, charcoal flecks, angular rock fragments, and bits of adobe. Atop Stratum 3 was deposited a fine pale brown sand unit (Stratum 2) with fewer artifacts, less angular rock, less charcoal and ash, and no adobe chunks.

Figure 6-3



STRATUM 1	COLLUVIAL SAND, WALL FALL, SLOPE SLUMP
STRATUM 1A	STRATUM 1 WITH ADOBE AND MUCH CHARCOAL
STRATUM 2	FINE, LIGHT BROWN SAND, ANGULAR ROCK, CHARCOAL FLECKS
STRATUM 3	MIDDEN. RESEMBLES 1A, BUT MORE CHARCOAL, ADOBE, MUCH MORE ANGULAR ROCK
STRATUM 4	MIDDEN. FINE SAND, ASH, LITTLE CLAY, FEW ANGULAR CLASTS
STRATUM 5	NEARLY STERILE, PALE BROWN SAND, SPARSE ANGULAR ROCK
STRATUM 6	ANGULAR GRAVEL (CHANNEL FILL). SOME CULTURE
STRATUM 7	DENSE DARK BROWN CLAY MARL WITH CALICHE. STERILE

Overlying Stratum 2 was a deposit of slumped (soliflucted) clay loam filled with wall fall and mixed room fill materials (Stratum 1). This unstructured deposit was also encountered as the surface stratum of Trenches 4 through 8A. It appears to represent an unstable soil developed on wall fall and midden deposits through cryoturbation, solifluction, and bioturbation which occurred as a result of freezing, soil saturation, and, consequently, luxurious vegetation growth on the extreme (60% to 120%) northerly slopes of the south bank of Gallinas Creek. Evidence of this horizon was first encountered in Trench 3, but was not fully understood until soil flow events were successfully reconstructed in Trenches 7 and 8.

It is thought that the clay which underlies all of the northwestern part of LA 1178 (Stratum 7 in Trench 3) is unstable when saturated and tends to flow outward along cut faces. This flow apparently results in the subsidence, collapse, and stretching of overlying strata, producing a mixed cultural surface stratum that is stratigraphically distinct. This stratum is called the slump stratum in subsequent sections of this report.

It would appear that substantial groundwater flow passes through the sediments encountered in Trench 3, especially the coarse angular deposit of Stratum 6. The clasts within Stratum 6 were coated with a purple-brown mineral bloom, which also occurred on chipped stone and sherds from Strata 3 to 6. This bloom appears to be a mineral complex containing psilomelane (hydrous manganese oxide); a range of iron oxides and organoferrous oxides may also be present. The bloom clearly was precipitated by manganese-rich and iron-rich groundwater, flowing through these deposits during and after occupation of the site.

Trench 3 contained an unusually high proportion of rhyolite debitage; but this observation is based on a relatively small (93) item sample. Much of the lower midden faunal materials appeared to be scatological, including at least one bone fragment which seemed too large for human ingestion. Dog (and possibly human) gnawing were recorded from shallower deposits, but not noted in the deeper midden unit. The scatological incidence may indicate that latrine or night-soil discard midden deposits were encountered.

Ceramics from this stratigraphic sequence provide clues that corrugation coverage on Magdalena Utility wares may have become more complete with time, but the sample is too small to allow any strong inference in this regard.

Trench 3 produced an 8-rowed "Mexican Lowland" corn cob (FS 53) from the upper-lower midden contact zone; its measurements are reported in detail in Appendix A. Three samples of wood were rejected by Holloway for dendro submission (FS 34, 74, 78). A radiocarbon sample was drawn from the outer rings of the more "branch-like" chunks of charcoal from FS 78; it dated (Beta-36112) to 980 ± 70 BP uncalibrated. Unfortunately, the period around radiocarbon 980 was one of increasing atmospheric radiocarbon (Klein, et al. 1982). The sample, therefore, yields a very poor and wide calibrated date range. Even using the central tendency values to calibrate rather than Klein, et al.'s more conservative tabular procedure, the implied calibrated age is AD 1060 plus 140 or minus 110 years. The equivalent stratum in Trench 4 produced Reserve Black-on-white sherds and

low painted/unpainted Magdalena Whiteware ratios underneath strata with much higher ratios, perhaps indicating that the radiocarbon date is reasonable, if regrettably broad. Only one other special analysis sample was submitted. Holloway (Appendix A) examined the Magdalena shoulder-corrugated jar which was found associated with elk-bison bone and a large biface knife/preform in the lower strata (FS 1601, 1602, 1606). He found only ashy dust and chenopod-amaranth pollen.

6.5 TRENCH 4

This trench (1 x 3 m; oriented at 347°30'), located on the next gabion key anchor site east of Trench 3, proved to be stratigraphically similar to Trench 3. Deposits resembling those interpreted as a possible springpipe in Trench 3 appeared all across Trench 4 as an intrusion into sparse sandy midden units like those overlying Stratum 6 in Trench 3. The coarse angular deposit in Trench 4 may not have the same origins as that in Trench 3, but it exhibited a similar secondary mineralization bloom (see Figure 6-4).

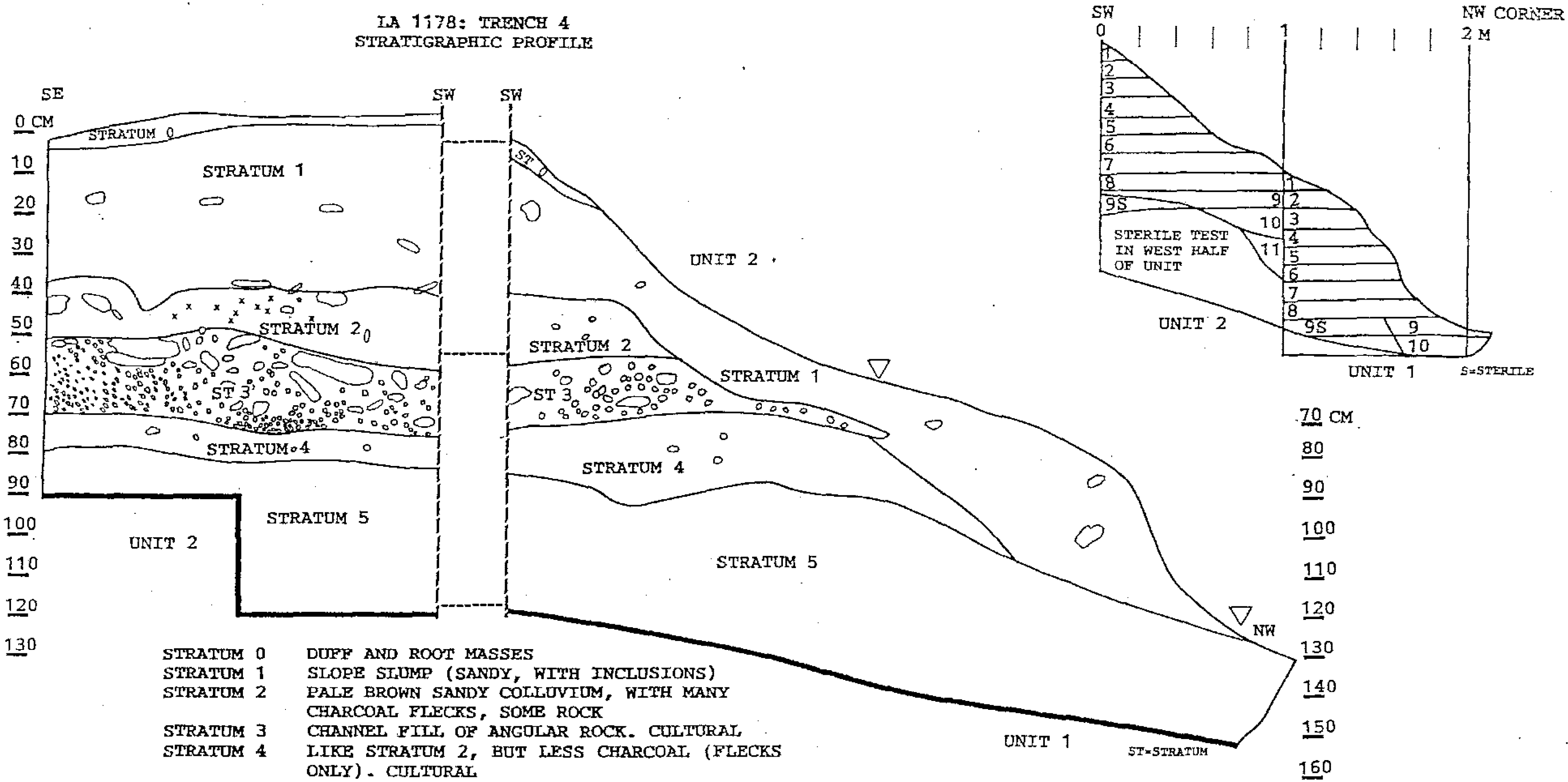
The deepest deposit in Trench 4 (Stratum 5) was the same basement clay unit encountered in Trench 3 (Stratum 7). This was overlain by a sandy, horizontally bedded deposit containing cultural materials and charcoal flecks (Stratum 4). This deposit was overlain by a channel fill deposit of angular rock fragments (Stratum 3), which in turn was capped by a second sandy deposit (Stratum 2) resembling Stratum 4 but containing more cultural materials and larger pieces of charcoal. All of these strata were truncated by the culturally rich slump stratum (Stratum 1) which lay, in this trench, at a 75% slope.

Trench 4 slope slump (the top stratum) had an unusually high ratio of Magdalena Black-on-white to unpainted Magdalena Whitewares. This may indicate deposition during the period around AD 1275 when Tularosa-Klagetoh Black-on-white was at its peak of "negative-paint" exuberance, if we hypothesize that Magdalena Black-on-white style involution actually did track developments in Tularosa Black-on-white. Underlying Trench 4 deposits had the usual proportions of Magdalena Whiteware painted and unpainted sherds. Only the slump stratum had Madgalena and El Paso Polychromes (but only one sherd of each), while Reserve Black-on-white was present in the deeper Slump + Stratum 3 + Stratum 4 pooling (Poolset 13).

Trench 4 had a higher proportion of chert debitage than any other main trench, but the total assemblage size was too small to allow inference (42 items, of which six were chert).

In the slump stratum of Trench 4 was found a modern? peach pit. A piece of obsidian from FS 119 was sourced as Jemez. Samples of Magdalena Obliterated Corrugated and Magdalena Black-on-red were subjected to thin-section study (in the first microscopic thin-section study of these types ever published), verifying their local origin and/or consistency with other Magdalena types.

Figure 6-4



STRATUM 0 DUFF AND ROOT MASSES
STRATUM 1 SLOPE SLUMP (SANDY, WITH INCLUSIONS)
STRATUM 2 PALE BROWN SANDY COLLUVIUM, WITH MANY CHARCOAL FLECKS, SOME ROCK
STRATUM 3 CHANNEL FILL OF ANGULAR ROCK. CULTURAL
STRATUM 4 LIKE STRATUM 2, BUT LESS CHARCOAL (FLECKS ONLY). CULTURAL
STRATUM 5 DENSE DARK BROWN CLAY MARL WITH CALICHE. STERILE

CHARCOAL ROCK UNIT SEPARATION

0 30 CM

6.6 TRENCH 5

Trench 5 (1 x 2 m; oriented at 354°30') was placed at the next gabion key location east of Trench 4. It encountered the first intact intramural deposits found on this project (see Figure 6-5).

The clay layer (Stratum 4) which formed the basement deposit for this trench was somewhat different from the clays encountered in previous trenches. It was gray in color, very compact and hard, and displayed little caliche development. It either had been truncated by stream erosion or else was deposited horizontally. Cut into and overlying this deposit were a complex of alluvial or colluvial deposits (Stratum 3) that were culturally sterile. Substrata 3b and 3c were sandy deposits, probably alluvial. Substratum 3A was a lateral drainage channel entering the creek from the south; it was completely filled with coarse angular rhyolite clasts in a fine sand matrix. Both the fine sand and the angular clasts exhibited the same heavy dark brown-purple mineralization seen in similar basement deposits in Trenches 3 and 4.

Immediately overlying Strata 3b and 3a in the south half of Unit 2 was Feature 1.1, a heavy, puddled adobe floor (Stratum 2i) about 1.5 to 3.0 cm thick. It still lay horizontally but it was intact only in the southernmost quarter and southwestern corner of the unit. In the northwest quarter of Unit 2, the floor overlay a prepared footing trench (Stratum 2k) which had been dug into Stratum 3, and extended to a masonry wall. Below the floor in the southeast corner of Unit 2 was Feature 1.1B, a shallow basin hearth lined with roasted clay and small, burned flagstones (10 x 10 x 3 cm) (Stratum 2j). Much of this basin lay outside the area excavated; the quantity of the feature's fill present within the excavated unit was not sufficient to justify sampling. Immediately below the floor in the southwest corner of Unit 2 was a 1.0 to 2.0 cm layer of white, carbonaceous ash which may have been truncated to the northwest by excavation of the wall footing trench.

The wall footing trench, Feature 1.1A, (oriented at approximately 15° east of true north) was originally excavated to a depth of up to 30 cm and a width of approximately 60 cm. It was then refilled with a 10 cm thick layer of clean stream sand. Upon this base, the walls of the trench were lined with thin slabs of rhyolite or sandstone (typically 10x15x3 cm in size); wall footer blocks of rhyolite (typically about 20x20x40 cm in size) were then placed between the lining slabs. The trench was then backfilled with more clear sand. The wall was constructed on the footer blocks by laying interlocking double courses of thin (up to 10 cm thick) rhyolite slabs in sandy adobe mortar to produce a double-faced, coreless masonry wall.

Immediately above the floor stratum in the southern part of Unit 2 lay a thin (3 to 4 cm thick) lens of aeolian sand (Substratum 2h). Over this lens, in the southeast corner of Unit 2 only, lay a stratum of sandy roof fall, containing at least three totally decomposed north-south oriented *latillas* (Substratum 2g). Covering the entirety of Substrata 2g, 2h, and 2i was a lens of charcoal-rich cultural fill (Substratum 2f) containing three larger decomposed north-south oriented *latillas* or small *vigas* (up to 5 cm in diameter). This was capped by another aeolian sand lens (Substratum 2e), which was, in turn, capped by a discontinuous

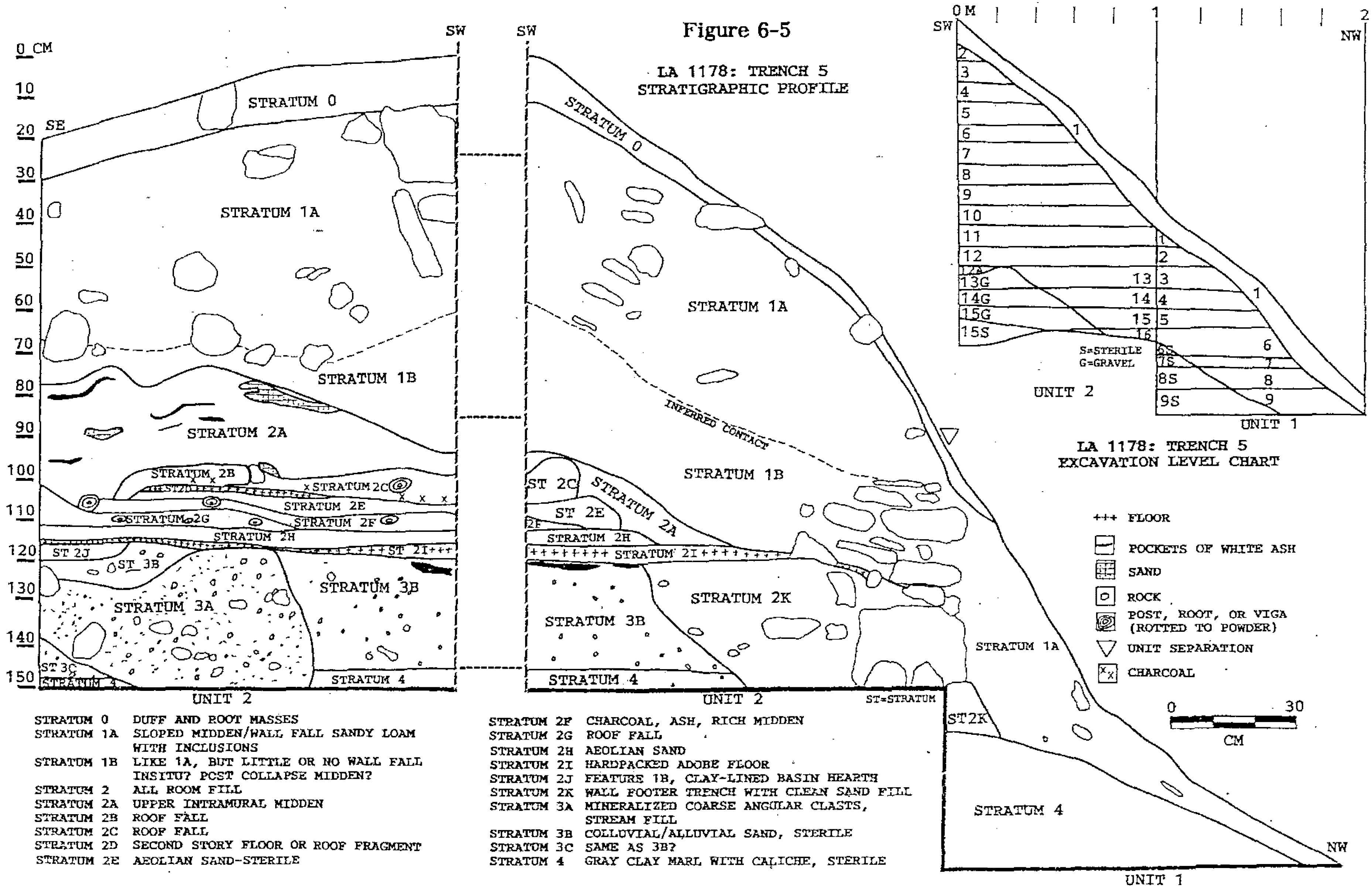


Figure 6-5

LA 1178: TRENCH 5 STRATIGRAPHIC PROFILE

adobe floor or roof plaster fragment, Feature 1.2 (Substratum 2d). Overlying all these deposits, except in the far southeast corner of Unit 2, was a layer of mixed charcoal, adobe, and sand interpreted as roof fall and upper wall plaster fall (Substrata 2b and 2c) containing yet another decomposed small north-south oriented *viga* or *latilla* about 6 cm in diameter.

At this point, it would seem that the north bounding wall of the room collapsed, at least partially, resulting in erosion of part of the room fill. Evidence of this event is the removal and truncation of Substrata 2c, 2e, and 2h along a path or water flow channel about 45 cm wide, oriented northeast and running along the inside face of the remnant west wall of the room. This erosional event appears to have thinned but not to have removed the lower floor stratum (Substratum 2i) near the wall, and to have truncated the intramural deposits in the north portion of Unit 2, removing them entirely.

Following this erosional event, cultural deposition was resumed, and the room enclosure remnant was used as a midden dump. The midden stratum (Substratum 2a) lay atop Substrata 2b and 2c in the south edge of Unit 2, but directly atop floor Substratum 2i in the northwest part of the unit, and thus filled the channel. It contained numerous distinct microlenses (basket-load dump events?) of charcoal, clay, other trash, sand, loam, and compact, clean, white ash. This white ash was encountered repeatedly elsewhere in the site as well. It exhibited heavy secondary carbonate and oxide deposition which rendered it hard and thixotropic. In the field, it was mistaken for kaolin or montmorillonite.

Overlying Stratum 2a was Stratum 1. Although the texture and color of this stratum (interpreted as a wall fall/slump deposit) is invariant, large wall fall rocks were present only in the upper portion of the stratum (i.e., the part not contained behind the remnant west wall of the room). This may imply either that the slump stratum is composed of true midden soils (a culture-rich sandy loam) admixed with wall fall rocks, or that the lower portion (Substratum 1b) of Stratum 1 was a secondary deposit of plaster and other fill which received rock wall fall only after it had mostly filled the room remnant. In the former case, the implication is that occupation of LA 1178 persisted for a considerable time after the deposition of post-collapse midden Substratum 2a. In the latter case, abandonment may have happened rather earlier, with the absence of wall fall in Substratum 1b being a function entirely of the character of the structural decomposition sequence uphill to the south.

The inchoate wall fall in Substratum 1a was especially dense in the far southwest corner of Unit 2. The excavators suspected that this was due to the presence of an east-west wall not far beyond the southern limits of excavation; this still seems likely to the author.

In this trench was found the only possibly intramural midden deposits having a high proportion of the small "ornamental" (birds with ornate plumage) bird remains. The lithic assemblage in this trench was unusually high in rhyolite debitage, but the assemblage size was small, indicating that this may have been a sampling effect.

The ceramic assemblage here was remarkable only for the contrast between a sparse mix of local and intrusive decorated wares and utilities in first floor and subfloor contexts versus a relative dominance of local decorated ware even over local utility ware and a near absence of exotics in the second-story and post-collapse deposits. The significance of this contrast cannot as yet be assessed.

From this trench, a total of three pollen samples, two macrobotanical samples, four potential dendro samples, two radiocarbon samples, and two ash/clay samples were submitted. Of the pollen samples (FS 224, 234, and 262), only FS 224 was rich. All three samples indicated the use of wild species, and none contained corn pollen. The macrobotanical data included another intrusive peach pit, pine charcoal, mesquite or locust charcoal, and both 8-row and 10-row corn cobs.

None of the dendro samples were judged by Holloway to be datable; the best exterior rings from FS 221 and 239 were then submitted to radiocarbon assay. These dated to 880 ± 60 BP (Beta 36113) and to 750 ± 50 BP (Beta 36114). Calibrating by central tendency, using the Klein, et al. (1982) curve, these dates are AD 1220 plus 30 or minus 70 years and AD 1270 plus 30 or minus 30 years. As the latter date falls into a period of rapidly declining atmospheric radiocarbon, one may assume it is extremely reliable.

The deposits in Trench 5 that had been mistaken for kaolin or montmorillonite were shown by chemical and microscopic analysis to be calcified wood ash. The presence of these thick white ash deposits would seem to indicate protected deposition: white ash is so fine that it normally disperses in the slightest wind.

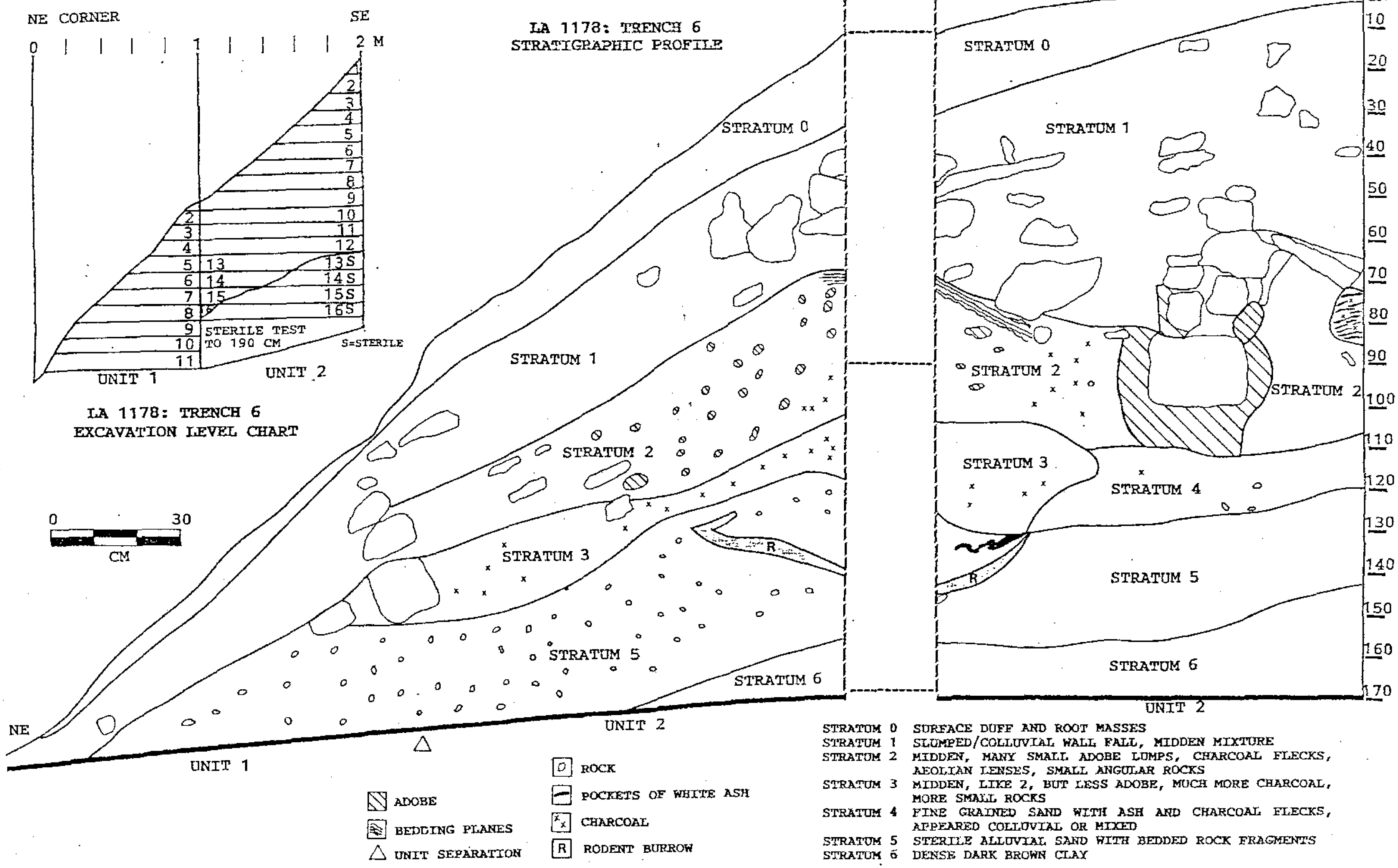
6.7 TRENCH 6

Trench 6 (1 x 2 m; oriented at 0°) was placed at the next gabion key location east of Trench 5. In this trench was found a wall, badly slumped but still articulated (see Figure 6-6).

The basement stratum in this trench was a sterile clay (Stratum 6), indistinguishable from the clay basement stratum found in Trench 4. Neither it <u>nor overlying strata</u> lay horizontally; rather, <u>all</u> sloped northward at 35%, perhaps indicating that the clay had flowed or subsided. Atop the clay was a sterile alluvial deposit (Stratum 5) composed mostly of clean sand with admixed angular rock fragments, most of which appeared to be lying flat.

Overlying Stratum 5 in the western half of Unit 2 was a deposit (Stratum 4) similar to Stratum 5, but containing artifacts, charcoal flecks, and ash. This stratum, which displayed no orientation of clast bedding, had been cut or eroded away in the eastern half of the unit. The fill of the cut-away area was a sandy loam rich in charcoal flecks and small charcoal chunks (Stratum 3).

Figure 6-6


LA 1178: TRENCH 6
STRATIGRAPHIC PROFILE
NE CORNER
SE
0
1
2 M
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
13S
14S
15S
16S
STERILE TEST
TO 190 CM
S=STERILE
UNIT 1
UNIT 2
LA 1178: TRENCH 6
EXCAVATION LEVEL CHART
0
30
CM
SE
SE
SW
0 CM
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
STRATUM 0
STRATUM 1
STRATUM 2
STRATUM 3
STRATUM 4
STRATUM 5
STRATUM 6
R
NE
UNIT 1
UNIT 2
ADOBE
BEDDING PLANES
UNIT SEPARATION
ROCK
POCKETS OF WHITE ASH
CHARCOAL
RODENT BURROW
STRATUM 0 SURFACE DUFF AND ROOT MASSES
STRATUM 1 SLUMPED/COLLUVIAL WALL FALL, MIDDEN MIXTURE
STRATUM 2 MIDDEN, MANY SMALL ADOBE LUMPS, CHARCOAL FLECKS, AEOLIAN LENSES, SMALL ANGULAR ROCKS
STRATUM 3 MIDDEN, LIKE 2, BUT LESS ADOBE, MUCH MORE CHARCOAL, MORE SMALL ROCKS
STRATUM 4 FINE GRAINED SAND WITH ASH AND CHARCOAL FLECKS, APPEARED COLLUVIAL OR MIXED
STRATUM 5 STERILE ALLUVIAL SAND WITH BEDDED ROCK FRAGMENTS
STRATUM 6 DENSE DARK BROWN CLAY

Stratum 2 lay atop Strata 3 and 4, extending across almost all of Unit 2 and a few centimeters north into Unit 1. Stratum 2 was a midden deposit similar to Stratum 3, but differing in that it contained numerous adobe lumps and in that rocks and charcoal fragments were sparser and smaller in Stratum 2 than in Stratum 3. In the southern few centimeters of Stratum 2, horizontal banding indicated that the stratum had been deposited horizontally and had later slumped down to the north.

Stratum 1, the wall fall slump stratum, overlay Stratum 2 in most of Unit 2 but lay directly on Stratum 5 in a portion of Unit 1.

The wall in Trench 6 was badly disarticulated. It appears from the Unit 2 south profile that the wall was founded in an unlined footing trench dug into Stratum 2 and refilled with adobe. Examination of the east wall profile at the Unit 1/2 juncture, however, suggests that the wall was not founded at all. Curiously, the wall footing in the east trench appears to extend down to the Stratum 3/4 context, while the footing in the south trench was clearly emplaced from the top of Stratum 2 down no deeper than the Stratum 2 contact with Strata 3 and 4.

Examination of field excavation level records indicates that the wall, as encountered near the trench surface, was oriented almost due north-south and that it was constructed as interlocked, double-coursed, uncored masonry. As excavation proceeded downward, the wall alignment contact <u>rotated eastward</u>. This indicates that the wall was originally aligned north-northeast, and that slumping disarticulation pulled and rotated the wall downhill to the north, with the effects of slumping dislocation forces becoming progressively more severe nearer the slope surface.

As a result, the original character of the architecture in Trench 6 is probably not interpretable with any degree of reliability. We may be sure that a north-northeast trending wall was constructed here, but the consistency of its workmanship, the number of construction components represented, and even the original (preslumping or precollapse) slope of the surface upon which it was built are not reconstructible from the data at hand. The depth of the Stratum 6 clay deposit upper contact in this trench sheds doubt on simple slumping, thixotropic flow, or collapse of the clay basement as explanations for the northward dip of overlying strata in Trench 6, but some variant of these processes indeed seems to have occurred.

In this trench, the tiny lithic assemblage (251 items) was remarkable mainly for a high (but obviously not significant) incidence of chert (3 items; 1.2%).

Trenches 2, 6, and 7 were the only trenches to yield incised wares. Trench 6 produced one sherd of Playas Incised Red and one sherd of Magdalena Incised Plain ware. The only other exotics were two sherds of White Mountain Redware and a sherd of Tularosa Black-on-white. No chronologically significant ceramic trends could be noted.

A high incidence (on small samples) of intensive rodent gnawing was seen on collections from the east room floor and from subfloor deposits, perhaps suggesting that these rooms stood open for a time before first occupation and after room abandonment.

From this trench CGI submitted for analysis five macrobotanical samples (FS 534, 556, 570, 581, and 582), three possible dendro samples (FS 523, 538, 555), one obsidian sample (FS 564), another white ash sample, and a polychrome sherd for thin-section study. The possible dendro samples were rejected. The ash sample was not different from those analyzed from Trench 5. The macrobotanical samples from upper levels included piñon seeds (burned and unburned) and pine charcoal. The possible upper roomfill sample may have been disturbed; it contained juniper charcoal, a charred corn cupule, bug parts, bone chips, lithic fragments, and "a fragment of paper with typing" (Appendix A). On examination, the contaminant proved to be a fragment of the newspaper used as backing to dry float specimens at the CGI lab. The obsidian sample, from floor/subfloor midden context, was sourced as Beaver Creek (Colorado) obsidian. The author questions this identification. The sherd was characterized, based on thin-section examination, as Acoma Glaze Alpha Polychrome. It had sherd temper.

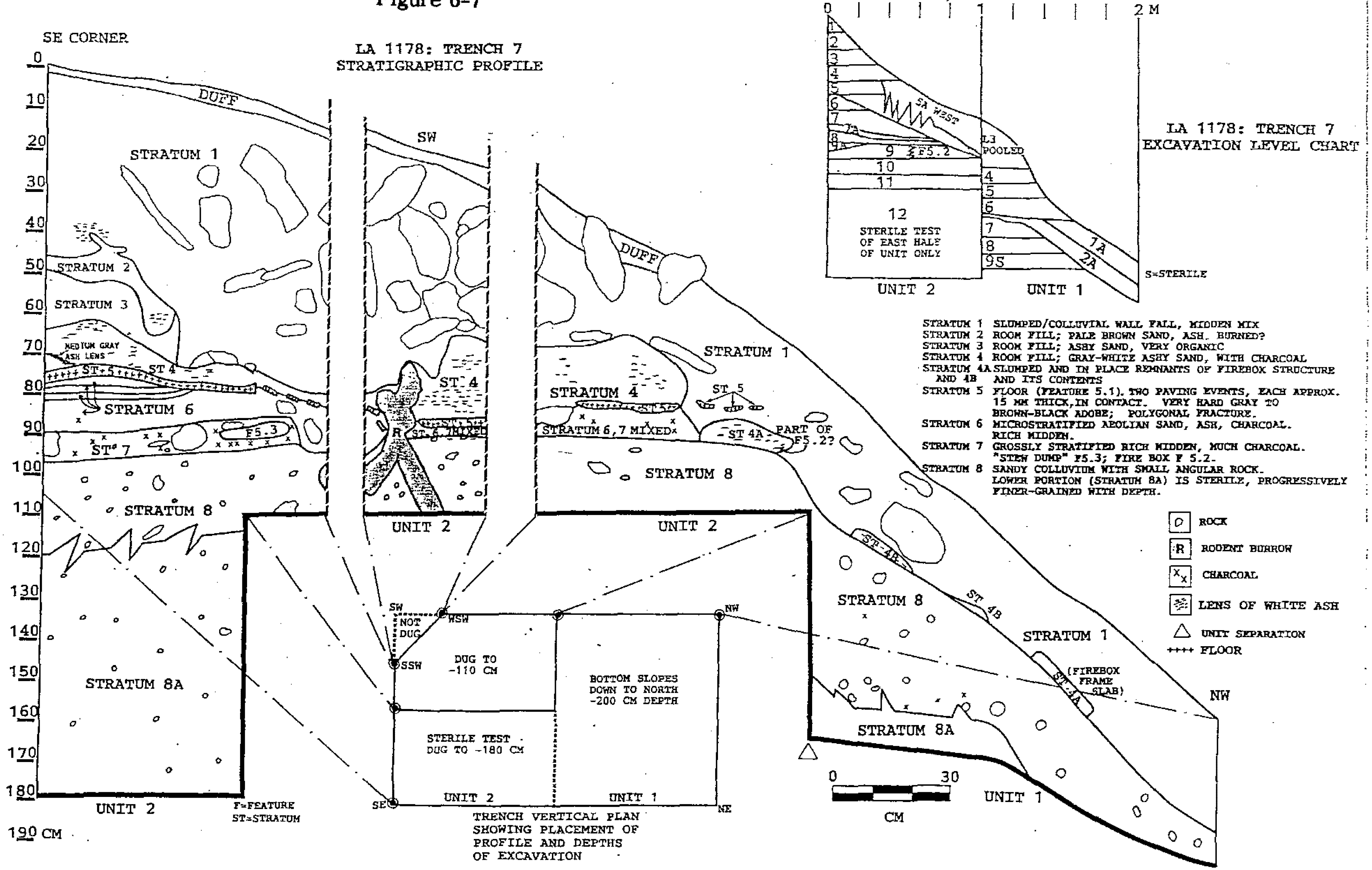
6.8 TRENCH 7

Trench 7 (1 x 2 m; oriented at 356°30') was placed at the next gabion key location downstream from Trench 6. It encountered relatively undisturbed intramural subfloor, floor, and roomfill deposits. It also provided further evidence of the character of solifluction/cryoturbation processes along the south margin of Gallinas Creek (see Figure 6-7).

The sterile basement stratum (Stratum 8a) in this trench was a sandy colluvium with angular rhyolite clast inclusions. The clay basement stratum found in Trench 1 through 6 was not encountered in Trench 7. Stratum 8a graded upward into Stratum 8, which was distinguished by increased abundance of angular clasts and by the presence of cultural materials. It is likely that Stratum 8 represents a trampled early use surface developed on Stratum 8a.

Overlying Stratum 8 was Stratum 7, a rich but poorly stratified midden (probably extramural in context). Intruded into Stratum 7 through the room floor (Stratum 5) and subfloor midden (Stratum 6) was a slab-lined rectangular firebox (Feature 5.2). Portions of this firebox remained in situ. These had been paved over in the single resurfacing event that could be recognized in Stratum 5. The firebox may have been built as a component of the lower surface of the floor. Its northern portion had slumped up to 1.2 m north and 1.0 m down. Two slabs which refitted to in situ firebox wall slabs were found lying conformably on the Stratum 1/8 slump contact surface in the north-central part of Unit 1. Isolated, slumped portions of the fill of the firebox were apparently present as stringer lenses all along the Stratum 1/8 slump contact surface in Unit 1. Included within Stratum 7 was a concentrated mass of burned or oxidized pinyon nuts, maize kernels, twigs, and other matter that were separately collected and labeled as Feature 5.3. In the field, this

Figure 6-7



LA 1178: TRENCH 7
STRATIGRAPHIC PROFILE
SE CORNER
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190 CM
DUFF
SW
STRATUM 1
STRATUM 2
STRATUM 3
MEDIUM GRAY ASH LENS
ST 5
ST 4
STRATUM 6
ST 7
F5.3
ST 6 MIXED
STRATUM 4
ST 5
STRATUM 6,7 MIXED
ST 4A
PART OF F5.2?
STRATUM 8
STRATUM 8A
ST 4B
(FIREBOX FRAME SLAB)
NW
UNIT 2
UNIT 1
F=FEATURE
ST=STRATUM
SW
NOT DUG
WSW
SSW
DUG TO -110 CM
BOTTOM SLOPES DOWN TO NORTH -200 CM DEPTH
STERILE TEST DUG TO -180 CM
SE
NE
TRENCH VERTICAL PLAN SHOWING PLACEMENT OF PROFILE AND DEPTHS OF EXCAVATION
0
30
CM
LA 1178: TRENCH 7
EXCAVATION LEVEL CHART
0
1
2 M
5A WEST
L3 POOLED
F5.2
12
STERILE TEST OF EAST HALF OF UNIT ONLY
9S
S=STERILE
STRATUM 1 SLUMPED/COLLUVIAL WALL FALL, MIDDEN MIX
STRATUM 2 ROOM FILL; PALE BROWN SAND, ASH. BURNED?
STRATUM 3 ROOM FILL; ASHY SAND, VERY ORGANIC
STRATUM 4 ROOM FILL; GRAY-WHITE ASHY SAND, WITH CHARCOAL
STRATUM 4A AND 4B SLUMPED AND IN PLACE REMNANTS OF FIREBOX STRUCTURE AND ITS CONTENTS
STRATUM 5 FLOOR (FEATURE 5.1). TWO PAVING EVENTS, EACH APPROX. 15 MM THICK, IN CONTACT. VERY HARD GRAY TO BROWN-BLACK ADOBE; POLYGONAL FRACTURE.
STRATUM 6 MICROSTRATIFIED AEOLIAN SAND, ASH, CHARCOAL. RICH MIDDEN.
STRATUM 7 GROSSLY STRATIFIED RICH MIDDEN, MUCH CHARCOAL. "STEW DUMP" F5.3; FIRE BOX F 5.2.
STRATUM 8 SANDY COLLUVIUM WITH SMALL ANGULAR ROCK. LOWER PORTION (STRATUM 8A) IS STERILE, PROGRESSIVELY FINER-GRAINED WITH DEPTH.
ROCK
RODENT BURROW
CHARCOAL
LENS OF WHITE ASH
UNIT SEPARATION
++++ FLOOR

feature was identified as a "stew dump" or food discard concentration. It appeared to have been burned or scorched. Overlying Stratum 7 was Stratum 6, a very rich microlaminated midden having hard white ash, gray-black ash, charcoal, and relatively sterile aeolian sand lenses; these were most clearly differentiated in the upper portion of Stratum 6. This stratum appears to have been deposited in a constrained, perhaps even an intramural, context. It is either absent or else was obscured by rodent disturbance and mixing with Stratum 7 in the western portion of the trench.

Immediately overlying the Stratum 6 midden was Stratum 5 (Feature 5.1), a laminated, puddled adobe floor. This very hard deposit was laid down in two paving events, each about 15 mm thick. No lenses of other material were found between the two paving levels. The floor material was blocky with an angular fracture and it had broken up into irregular polygonal "tiles". It was variably dark red brown (intermediate between Munsell 5YR4/3 and 7.5YR4/2) in color. Under 40x magnification, it was strikingly similar in composition to the typical temper of Magdalena wares, being composed of angular rhyolite fragments, sparse clay and silt fines, and slightly rounded quartz, feldspar, sanidine, and mica fragments.

The floor was relatively intact over the southern third of Unit 2. It was disrupted in two locations by rodent holes. Adjacent to these holes burrow collapse had produced floor subsidence.

As was noted above, a rectangular, slab-lined firebox was found in place below the floor stratum in the northwest corner of Unit 2. This feature was filled with charred wood, charred bone, a quartz crystal, and sherd fragments in a white, hard, calcic ash matrix. The firebox appeared to have been roughly 45 cm long by 35 cm wide by 10-15 cm deep. It was oriented to approximately 23° east of north, or to about 30° east of the trench orientation. It was lined on the sides and bottom with large slabs of rhyolite/rhyolitic sandstone which were up to 3.0 cm thick. These had been ground to shape; at least one may have seen previous use as a palette. The slabs were set into adobe plaster and both the adobe and the slabs were distinctly oxidized.

Atop the Stratum 5 floor lay Stratum 4, an artifact-rich deposit of gray-white ashy sand with intermixed charcoal chunks and flecks. It was overlain, in turn, by Stratum 3, an ashy tan sand midden deposit. Atop Stratum 3 lay Stratum 2. Both deposits were intact only in the southeast corner of Unit 2. Stratum 2 was a pale brown sand with ash and charcoal flecks.

Stratum 4 (and perhaps Strata 2 and 3) were originally deposited as intramural fill. As the walls constraining this fill deposit began to collapse, much of Stratum 4 and almost all of Stratum 2 and 3 were washed and/or soliflucted away by a drainage channel that developed along the long axis of Trench 7. This channel was then filled and the remnants of Strata 2-4 were then covered by the solifluction/wall fall deposit, Stratum 1.

It is unclear to what degree the wash channel had impacted the deposits seen in Trench 7, but it seems likely that the northern half of Unit 2 was mostly unaffected by bank erosion. Rather, the loss of deposits in this area was due to solifluction and plucking of strata by the bottom of the slump flow lobe. Certain evidence of this was found in Trench 7: objects which refitted to the Feature 5.2 firebox, and small soil lenses which were identical to its fill, were found lying at a conformable 75% slope on the Stratum 1/8 contact surface in Unit 1. No evidence of a north wall was found, but that wall (which was probably present during the occupation and throughout the deposition of Strata 2-3) would surely have been lost to erosion and slumping along the creek bank.

Trench 7 ceramics were relatively unremarkable, except for the presence of a Pinedale/Pinnowa-like (possibly Zuni) glazeware sherd (the only one on the site), a Tularosa Black-on-white sherd, and a Playas Incised sherd. This last, as in Trenches 2 and 6, was accompanied by but not associated with a local incised sherd: a Magdalena copy of the Playas.

The lithic collection from this trench, almost all from subfloor, was atypically high in rhyolite, low in chert, and low in Grants obsidian. The high rhyolite percentage is thought by Hoagland to reflect wall construction trimming of rhyolite masonry. This pattern apparently was characteristic of the subfloor deposits in Trench 8 as well.

From Trench 7 were submitted six pollen samples (FS 630, 631, 643, 668, 670, 670), four macrobotanical collections (FS 647, 651, 655, 667), four possible dendro samples, a radiocarbon sample (FS 658), an obsidian sample (FS 683), a sample of floor material for composition study (FS 642), a sample of the suspected "spring-pipe" mineral deposits (FS 682), and a sample of Playas Incised Red pottery for thin-section study (FS 673). The pollen samples indicated high concentrations of grass, chenopod-amaranth, and corn pollen on the floor, together with pollen from a wide variety of other forms, including cacti, beeweed, buckwheat, purslane, two species of cattail, and nightshade/tobacco/chili (Solanaceae) pollen. Pine, cheno-am, high and low spine Asteraceae, cacti, beeweed, and corn pollens were found in association with the Feature 5.2 firebox. The pollen extracted from within floor tiles included corn, pine, willow, grasses, cheno-am anthers, high and low spine Asteraceae, and *Platyopuntia*.

Macrobotanical analysis revealed the presence in the firebox of juniper and pine charcoal. In the general subfloor samples were four cobs of 10-row corn, pine charcoal, mesquite or locust charcoal, unburned piñon seed, piñon hulls (burned?), an 8-rowed corn cob, and cupule and kernel fragments of corn, including one classifiable as flint corn.

Macrobotanical assessment of the "stew dump" (Feature 5.3) indicated the presence of burned grass leaves, corn cupules, piñon hulls, seeds and needles, pine and juniper charcoal, burned bone fragments, and a burned corn cob fragment.

The dendro samples were rejected by Holloway, so outer ring charcoal fragments from a subfloor collection of good context were submitted to Beta Analytic. They dated the specimen at 710 ± 50 BP (Beta 36115). Calibrated using the central tendency curve for

both the best estimate dates and the one-sigma limits of Klein, et al. (1982), this date is estimated as AD 1290 plus 35 or minus 30 years. As with Beta 36114, this sample falls well within a period of declining atmospheric radiocarbon and may therefore be assumed to be quite accurate.

The high pollen counts and the paving over of the firebox in the later use episode in the Trench 7 room may indicate a conversion to a storage function of a formerly domiciliary room, occurring some time well after AD 1260, and perhaps well after AD 1315!

The single obsidian item sourced from this trench was identified as Grants Ridge/Pumice Mountain vitrophyric obsidian, available in the area just north of Grants and of McCartys (120 km north-northwest) and perhaps as alluvial deposits much nearer to the site.

The floor deposit proved to be angular silt and sand fragments. No blood mordant or other binding agent, and almost no clay, was detected; no explanation for the floor's hardness was found.

The "spring-pipe mineralization" seems to be just that...deposits of psilomelane and other manganese/iron minerals laid down by groundwater flow through and under the LA 1178 ruins

The Playas Incised sherd was found not to be made on Magdalena paste, but also not to differ from Magdalena Red Incised in any marked manner. It may have been made in a town nearby.

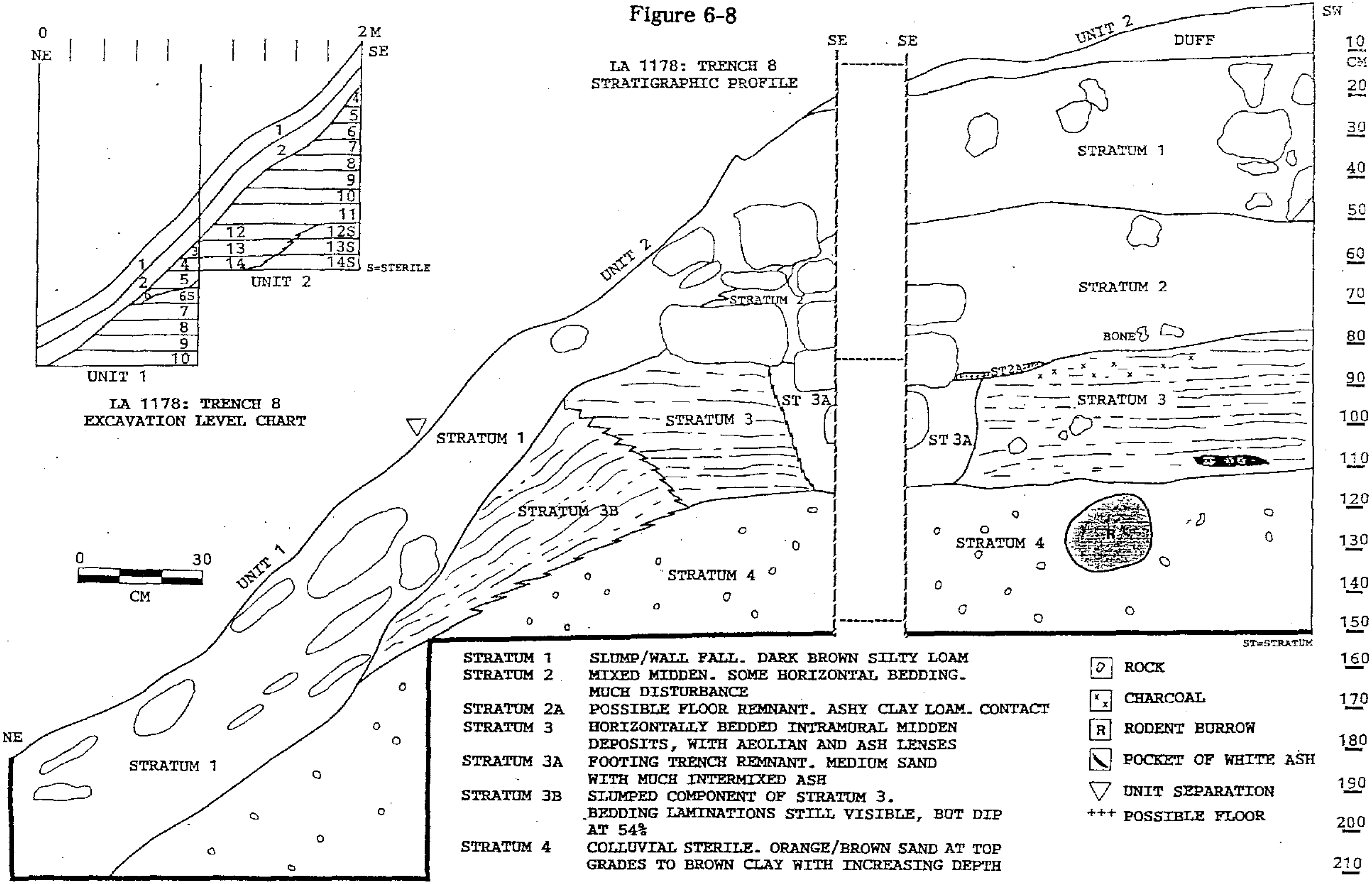
6.9 TRENCH 8

Trench 8 (1 x 2 m; oriented at 357°) was placed at the next gabion key location east of Trench 7. In this trench were found a wall, a preconstruction midden which may be intramural, and a possible floor remnant (see Figure 6-8).

The basement sterile stratum (Stratum 4) in this trench was a gray-brown alluvial clay, grading upward into an orange-brown sandy deposit that appeared to be mostly colluvial in origin. As the clay content increased with depth, the angular rock fraction of this stratum decreased. Prior to slumping, it appears that Stratum 4 was either a horizontal bench deposit or else that it had been leveled prior to deposition of the overlying Stratum 3. No evidence of soil formation was present on the Stratum 4/3 contact.

Stratum 3 was represented in the southern half of Unit 2 as a horizontally bedded, microstratified midden made up of individual lenses, some only a few millimeters thick. Lenses were found which were composed of aeolian fines, of white ash, of charcoal, and of clay loam. Toward the upper surface of the deposit, an increasing charcoal content was noted in most lenses.

Figure 6-8


LA 1178: TRENCH 8
STRATIGRAPHIC PROFILE
LA 1178: TRENCH 8
EXCAVATION LEVEL CHART
0
2 M
NE
SE
UNIT 1
UNIT 2
S=STERILE
1
2
3
4
5
6S
7
8
9
10
11
12
12S
13
13S
14
14S
0
30
CM
SE
SE
SW
NE
UNIT 1
UNIT 2
DUFF
STRATUM 1
STRATUM 2
STRATUM 3
STRATUM 3B
STRATUM 4
ST 3A
ST2A
BONE
10
CM
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
ST=STRATUM
STRATUM 1 SLUMP/WALL FALL. DARK BROWN SILTY LOAM
STRATUM 2 MIXED MIDDEN. SOME HORIZONTAL BEDDING. MUCH DISTURBANCE
STRATUM 2A POSSIBLE FLOOR REMNANT. ASHY CLAY LOAM. CONTACT
STRATUM 3 HORIZONTALLY BEDDED INTRAMURAL MIDDEN DEPOSITS, WITH AEOLIAN AND ASH LENSES
STRATUM 3A FOOTING TRENCH REMNANT. MEDIUM SAND WITH MUCH INTERMIXED ASH
STRATUM 3B SLUMPED COMPONENT OF STRATUM 3. BEDDING LAMINATIONS STILL VISIBLE, BUT DIP AT 54%
STRATUM 4 COLLUVIAL STERILE. ORANGE/BROWN SAND AT TOP GRADES TO BROWN CLAY WITH INCREASING DEPTH
ROCK
CHARCOAL
RODENT BURROW
POCKET OF WHITE ASH
UNIT SEPARATION
+++ POSSIBLE FLOOR

Intruded into Stratum 3 and only just intercepted by the southeast corner of Unit 2 was a footing trench (Stratum 3a) 28 to 35 cm deep, which had been excavated from the top of Stratum 3. The trench had been backfilled with about 10 cm of ashy sand fill before a footer course of stones was laid into it. After the footer course was laid, backfilling was completed using the same ashy sand material for fill. One small upright slab was found in place in the wall of this trench.

Stratum 3 was also present in the north half of unit 2 and in the southern edge of Unit 1, but as a slumped deposit (Stratum 3b), dipping at 54% slope. Bedding planes between microlenses could be followed from their horizontal bedding in Stratum 3 down along most of the reach of Stratum 3b. This observation seems to indicate that the northern part of Stratum 3 was slumped due mostly to collapse of the underlying deposit, and not because the deposit itself actually underwent solifluctive movement.

Extending up from the footer trench were three or four courses (counting the footer) of massive, roughly rectangular, rhyolite blocks, each about 10-15 x 20 x 20 cm in size. No clear evidence of mortar or plaster was preserved in the interstices between these blocks. It is possible, however, the mortar and plaster were compositionally not distinguishable from Stratum 2, with which they lay in lateral contact. The wall above the third or fourth course had been truncated by slumping.

Stratum 2, a room fill deposit, either was not microlaminated (as was Stratum 3) or else it had been severely mixed by burrowing and root disturbance. The only evident substratum within Stratum 2 was Stratum 2a, a compact, ashy clay loam thought to have been the remnant of a floor. Stratum 2a was preserved only at the southeast corner of Unit 2, where it overlay the footer trench and abutted the wall. Stratum 2, as noted above, had little internal structure. It extended as a fairly homogeneous deposit across the south half of Unit 2. It was not distinguishable from the wall fill (mortar?) material that it abutted and overlay. It was a mottled, silty sand or sandy loam, brown to dark brown in color, and it was rich in artifacts.

Stratum 1 overlay Stratum 2 in the south end of Unit 2, Stratum 3 and 3b in the middle section of Trench 8, and Stratum 4 in most of Unit 1. It was essentially the same slump/solifluction/wall fall deposit as was encountered in Trenches 3-7. It appeared to have more unburned organic matter, more artifacts, less charcoal, and much more wall fall debris than did Stratum 2.

It seems evident that Trench 8 encountered a midden deposit, possibly intramural in context, upon which a north-northeast trending wall had been founded to enclose a room that had probably been floored. The nature of Stratum 3 may indicate that the Trench 8 wall was a later partition wall erected to subdivide an older room that already contained upwards of 35 cm of intramural midden. No evidence of floor fall or burning was seen on this (secondary?) occupation surface. The upper room fill (Stratum 2), judging from its poor stratification, may have been deposited as an extramural midden after the room roof was removed.

This trench was the only trench to have an "ornamental/economic" bird remains ratio approximating that of the entire collection. It also contained an unusually high proportion of worked bone items and two of the six ornamental/ceremonial stone/mineral items.

Trench 8 was unusually low in rhyolite and chert debitage, but it had a high proportion of Grants obsidian.

The ceramic sequence is not remarkable. There may be a trend toward more intensive painting of Magdalena Black-on-white in the later levels, but this is based on low counts only. Only the middle levels (Poolsets 74-76) and the surface slump levels contain exotic ceramics, but these are rare (one Tularosa Black-on-white, one Late Elmendorf? Black-on-white, two non-Magdalena Black-on-white).

From the Trench 8 collections were submitted two macrobotanical samples (FS 781 and 790), four potential dendro samples (FS 777, 782, 794, and 2704), and five obsidian samples (FS 711, 723, 773, 793, and 797). No radiocarbon, mineral, pollen, or ceramic section samples were studied.

From the slump stratum in Unit 1 was recovered the only evidence of *Rhus* (sumac family). Although charred, this specimen may be intrusive: *Ribes*, *Rhus*, and *Rosa* all grow along the creek edge today. Found in deeper deposits at or below floor level were a corn cob (10-row), loose corn cupules and kernels, and charcoal of pine and of mesquite/locust.

The dendro samples were not submitted for dating. All were rejected as too short by Holloway (Appendix A).

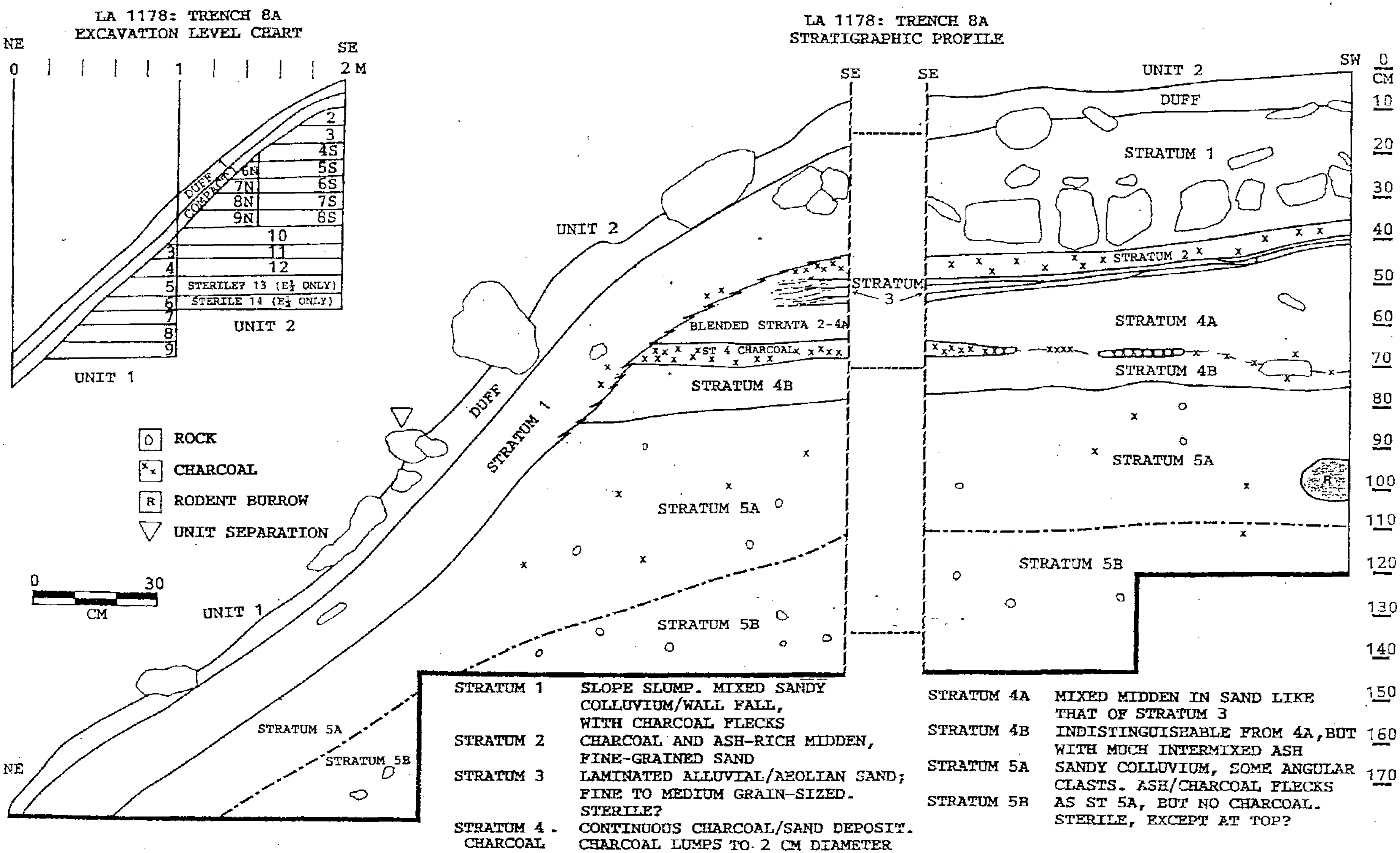
Of the five obsidian samples submitted for sourcing, two sourced as Grants, two as Jemez, and one as Red Hill.

6.10 TRENCH 8A

Trench 8A (1 x 2 m; oriented at 358°) was excavated at the next gabion key east of Trench 8. It encountered no walls, but it recovered data from horizontal midden strata deposited either in an intramural or in a sheltered extramural setting. It may have produced evidence of a major fire that occurred during occupation of the pueblo (see Figure 6-9).

The basement stratum in Trench 8A was a sandy alluvial/colluvial deposit with angular rhyolite inclusions (Stratum 5). The lower half of this deposit was sterile (Stratum 5b); the upper half (Stratum 5a) had sparse charcoal/ash flecks and sparse cultural inclusions, but was otherwise not distinguishable from Stratum 5b. The top of Stratum 5a sloped gently north-northeast at 8%. No soil development was noted at the Strata 5/4 contact.

Figure 6-9



LA 1178: TRENCH 8A
EXCAVATION LEVEL CHART
NE
SE
0
1
2 M
DUFF
COMPACT
2
3
4S
5S
6S
7S
8S
6N
7N
8N
9N
10
11
12
3
4
5
6
7
8
9
STERILE? 13 (E½ ONLY)
STERILE 14 (E½ ONLY)
UNIT 2
UNIT 1
ROCK
CHARCOAL
RODENT BURROW
UNIT SEPARATION
0
30
CM
LA 1178: TRENCH 8A
STRATIGRAPHIC PROFILE
SE
SE
SW
UNIT 2
DUFF
STRATUM 1
STRATUM 2
STRATUM 3
BLENDED STRATA 2-4A
ST 4 CHARCOAL
STRATUM 4A
STRATUM 4B
STRATUM 5A
STRATUM 5B
UNIT 1
NE
0 CM
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
STRATUM 1 SLOPE SLUMP. MIXED SANDY COLLUVIUM/WALL FALL, WITH CHARCOAL FLECKS
STRATUM 2 CHARCOAL AND ASH-RICH MIDDEN, FINE-GRAINED SAND
STRATUM 3 LAMINATED ALLUVIAL/AEOLIAN SAND; FINE TO MEDIUM GRAIN-SIZED. STERILE?
STRATUM 4 - CHARCOAL CONTINUOUS CHARCOAL/SAND DEPOSIT. CHARCOAL LUMPS TO 2 CM DIAMETER
STRATUM 4A MIXED MIDDEN IN SAND LIKE THAT OF STRATUM 3
STRATUM 4B INDISTINGUISHABLE FROM 4A, BUT WITH MUCH INTERMIXED ASH
STRATUM 5A SANDY COLLUVIUM, SOME ANGULAR CLASTS. ASH/CHARCOAL FLECKS
STRATUM 5B AS ST 5A, BUT NO CHARCOAL. STERILE, EXCEPT AT TOP?

Stratum 4 was a midden deposit composed of abundant ash, cultural inclusions, and fine charcoal flecks imbedded in a medium to fine sandy matrix. It was divided into upper (Stratum 4a) and lower (Stratum 4b) units by a charcoal-rich lens (Stratum 4 charcoal) that extended all the way across the southern half of Unit 2. This lens, which varied in thickness from 0.2 to 12 cm, was very rich in charcoal, with lumps of charcoal up to 2 cm in diameter being relatively common. It appeared to be horizontally bedded and was significantly thicker at its northern and eastern observed limits than it was farther south and west.

Stratum 4 appeared to be an extramural deposit. If this interpretation is correct, then the charcoal lens may mark a trash burning event or a major structural fire. The latter seems likely. If Unit 2 is not actually inside a room, it is surely no more than 2 to 3 m away from the nearest structure.

The character of the midden components of Stratum 4 lying above and below the charcoal horizon were not readily distinguishable, one from the other. No evidence of mixing of the lower and upper horizons with the charcoal lens was found. This either implies rapid, low-energy burial of the charcoal deposit by more primary midden accretions soon after the charcoal was deposited or water-floated separation of the charcoal from the lower midden by a ponding event. No evidence of ponding deposits was seen.

The upper surface of Stratum 4a sloped east-northeastward at about 12%. It was overlain by essentially sterile, fine-grained, laminated, alluvial or aeolian microstrata (Stratum 3) representing at least five distinguishable depositional events. In aggregate, these strata were no more than 6 cm thick anywhere in the unit. They would appear to have been deposited in a sheltered or circumscribed area (room, plaza, etc.) during a period of site abandonment.

Overlying Stratum 3 was a rather thin (typically 5 cm) stratum of midden with a rather high concentration of finely divided charcoal and ash (Stratum 2). Unlike the much higher concentration of charcoal in Stratum 4, this deposit had few charcoal lumps bigger than 5 mm in diameter. It may be an ordinary midden deposit. There was no evidence of mixing or trampling of this stratum into Stratum 3.

Erosion of the creek bank after the deposition of Stratum 2 resulted in the development of a typical slump/solifluction lobe (Stratum 1) which truncated Strata 2-5a and which sloped down to the north at inclines of 50% (at the bank top) to 125% (1 m farther north). It is unclear whether the slope was produced by creek erosion and then overrun and plucked out by a soil-flow lobe or whether the underlying strata collapsed and flowed, as they appear to have done in several of the trenches to the west. In either case, Stratum 1 in this trench was distinctive in that it contained apparently aligned wall fall rock in its southernmost (i.e., uppermost) end. The wall fall rock found in the south end of Unit 2 Stratum 1 appeared to be lined up along an east-west axis. These rocks may have been the disarticulated remains of an east-west wall that ran just to the south of Unit 2, and that collapsed northward.

Only two interesting ceramic assemblage anomalies were noted in this trench. First, of 127 sherds of El Paso Plain and El Paso Polychrome in the collection, 125 were found in Trench 8A. This is probably a single jar potdrop, but it may be a local pattern of use. No refitment has been attempted on this material. Secondly, the upper levels of this trench contained (on a very small sample) much more unpainted Magdalena Whiteware, while lower levels contained a higher proportion of Magdalena Black-on-white. This may be a local reflection of the trend (best known from Zuni, Acoma, and the White Mountains) toward the rapid simplification and opening of designs from very busy to almost cursory after ca. AD 1325, during the decline of the Klagetoh Pinedale style (Fowler 1989). Trench 8A was in many respects anomalous; its overall assemblage was less like those from Trenches 8 and 9 than they were like each other.

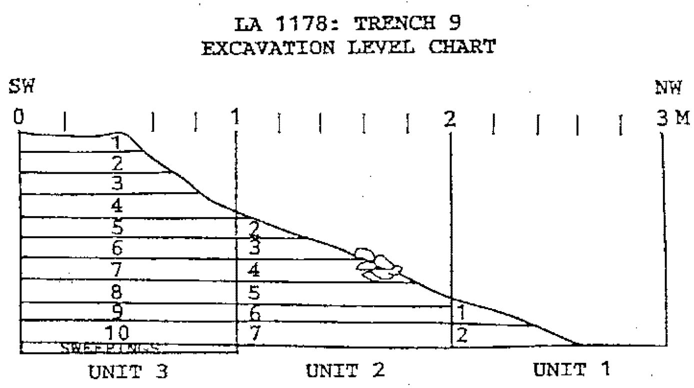
From this trench were submitted one possible dendro sample, one obsidian sample, and one mineral sample. The dendro sample (FS 1045) was rejected by Holloway. The mineral sample (FS 1031) was examined by Hill, who, in conjunction with McMilliam (Appendix D) determined that it was hematite. The obsidian (FS 1052) was determined to be from Beaver Creek, Colorado. The author, along with Montgomery, is skeptical of this determination. The author would note that the "Beaver Creek" specimens are all anomalously high in strontium, like the Cow Canyon source far to the southwest (Shackley, 1988) and like the analyzed but unsourced obsidian which the author (in Bertram, et al. 1989:6-36) has referred to as "Vitrophyre A". Another high-strontium source appears to be the nodule-bearing alluvium which Shelley, Montgomery, and Bowman (1988) have described as the "Tularosa Basin source". The only other known sources of vitrophyric, high-strontium obsidian occur in the San Francisco Mountain-Government Mountain complex in central Arizona (Shackley, 1988). Problematically, all three known sources are 200 km or more from LA 1178 and the San Agustin Plains. The "Tularosa Basin" source is known only as very small, rare nodules.

6.11 TRENCH 9

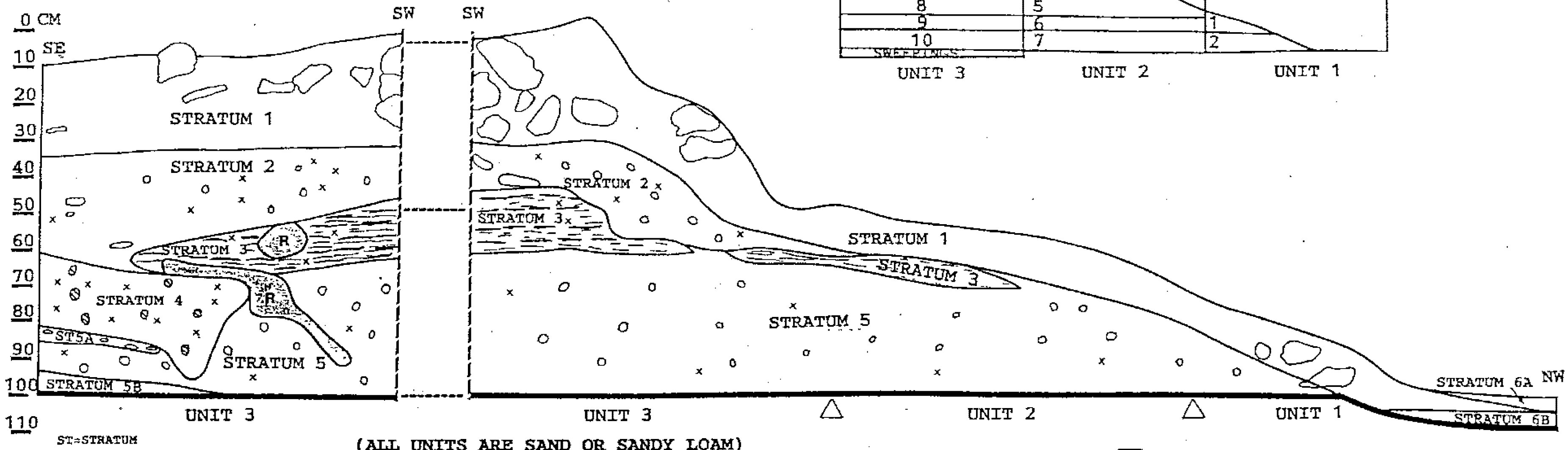
Trench 9 (1 x 3 m; oriented at 350°) was excavated at the next gabion key east of Trench 8A. Because it was placed in an area of low slope, it was a longer trench than the other excavated along the south bank of Gallinas Creek. It was the only major trench excavated on this project that did not reach down to any sterile deposits. By contract, it was excavated to a depth of only 1.0 m. It encountered extramural midden/colluvial deposits over its entire depth (see Figure 6-10).

The deepest stratum reached in Trench 9 was a sandy colluvial/alluvial loam with many small angular rocks, cultural inclusions, and occasional charcoal (Stratum 5). A small area in the southeast corner of Unit 3 encountered a possible earlier deposit (Stratum 5b) which was a crossbedded, sandy midden. Stratum 5 overlay Stratum 5b. Above Stratum 5b, Stratum 5 had been cut by erosion along a northeast-trending channel. This channel apparently then was filled by a higher-energy colluvial/alluvial wash deposit containing adobe lumps and a much higher percentage of angular rock fragments (Stratum 5a). The fill deposit was then re-eroded, leaving only a thin lens of Stratum 5a remaining in the

Figure 6-10



LA 1178: TRENCH 9
STRATIGRAPHIC PROFILE



(ALL UNITS ARE SAND OR SANDY LOAM)

STRATUM 1	SURFACE COLLUVIUM; MUCH WALL FALL OR STRUCTURAL STONE
STRATUM 2	MIDDEN, POSSIBLY REWORKED. MUCH ASH, CHARCOAL, BUT LITTLE STRUCTURAL STONE
STRATUM 3	MICROLAMINATED RICH MIDDEN. CONSTRAINED OR INTRAMURAL? ASH LENSES
STRATUM 4	CHANNEL FILL MIDDEN, REDEPOSITED. CONTAINS MANY ADOBE LUMPS
STRATUM 5	MIDDEN, POSSIBLY REWORKED. RESEMBLES STRATUM 2, BUT LESS CHARCOAL
STRATUM 5A	EARLIER CHANNEL FILL EVENT, SECONDARILY ERODED TO GRAVEL
STRATUM 5B	SANDY, CROSSBEDDED, MIDDEN WITH NO LARGE CLASTS. EARLIER CHANNEL FILL?
STRATUM 6A AND 6B	MAIN CREEK ALLUVIAL SAND DEPOSITS

ROCK
ADOBE
CHARCOAL
RODENT BURROW
UNIT SEPARATION

0 30
CM

channel floor. The presence of this upper channel suggests that the water course may even have existed prior to the deposition of Stratum 5. Strata 5 and 5b might represent an earlier channel fill event.

After the deposition and erosion of Stratum 5a, the channel was then refilled again, this time by a gray-brown ash-stained sand with numerous adobe lumps, admixed charcoal flecks and chunks, and lenses of white ash (Stratum 4). The entire deposit (Stratum 4 and the Stratum 5 complex) was then leveled, either deliberately or by erosion, leaving a low (5 cm relief) channel depression.

Atop the leveled surface was deposited a microlaminated midden deposit of variegated sands having copious ash and charcoal inclusions (Stratum 3). The bedding within this deposit was horizontal, so it probably was deposited within a constrained exterior context. Stratum 3 had higher frequencies of cultural materials than did any other stratum encountered in this trench.

Stratum 3 was then mostly eroded away, probably by a combination of flow from the small lateral drainage (in the southeast quarter of the trench) and by Gallinas Creek also (in Unit 2 and in Unit 3 north half), so that only remnants of the stratum remained. Over the entire eroded surface was deposited Stratum 2, a mixed and possibly redeposited midden deposit in a fine-grained brown sand matrix with quantities of small angular rock, charcoal flecks, and a few horizontally-bedded stone spalls and slabs. This deposit seems never to have been cut into by the small lateral tributary water course that cut the earlier channels.

Overlying Stratum 2 was the surface deposit Stratum 1. It was not different from Stratum 2 except in its reduced quantities of ash and charcoal, in its lesser quantities of small stone fragments, and in its much greater content of structural rock. In Unit 2, what may have been the base of a dry-laid east-west wall was encountered near the surface in this stratum. It had no evident footing and no soil differences were noted between the associated fill to the north and south of the alignment. It may have been produced by water flow alignment effects along the bank of Gallinas Creek rather than by deliberate construction.

In the far north end of the trench (which lay only about 25 cm above present stream grade), Stratum 1 was found to interdigitate with sandy deposits (Strata 6a and 6b) indistinguishable from those presently being deposited in the aggrading bed of Gallinas Creek.

It would appear that Trench 9 encountered only extramural midden deposits. All of these except Stratum 3 would seem to have been colluvially and/or alluvially redeposited or to have been deposited in an alluvially active lateral drainage. Stratum 3 seems to have been a constrained deposit; the character and condition of its microstrata almost suggest that it was deposited intramurally.

Trench 9 contained one of the four ceramic pipes, the possible bone cloudblower pipe, a high proportion of the small "ornamental" bird fauna and of the total worked bone assemblage, the single ref. *Conus* shell bell-bead, and the hematite pendent blank/crayon. The trench also had less than the normal proportion of rhyolite and Grants obsidian, but unusual amounts of chert debitage.

In the ceramics, deeper levels contained a high painted/unpainted ratio for Magdalena Whiteware, with associations (one each) of Pinedale/Heshotauthla Glaze polychrome and Socorro Black-on-white. Middle levels contained Magdalena Whiteware, which was still mostly painted, associated (only two sherds) with Chupadero Black-on-white. Upper levels contained a low ratio of painted to unpainted Magdalena Whiteware, associated with a single sherd of Casa Colorado Black-on-white.

From Trench 9, a total of four macrobotanical samples (FS 326, 380, 394, and 396), one mineral sample (FS 388), and one ceramic sample (FS 353) were submitted for analysis. The ceramic sample was a Chupadero Black-on-white sherd, which proved to contain crushed sherd having coarse sandstone temper made up of quartz, orthoclase, and sanidine. Its source was not specified, but it presumably was made in or east of the Rio Grande Valley. The mineral specimen was a fourth sample of "thixotropic clay" which again proved to be wood ash with secondary calcium precipitates adhering. The botanical specimens all proved to be pine charcoal; two species (presumably *P. edulis* and *P. ponderosa*) were present).

6.12 TRENCH 10

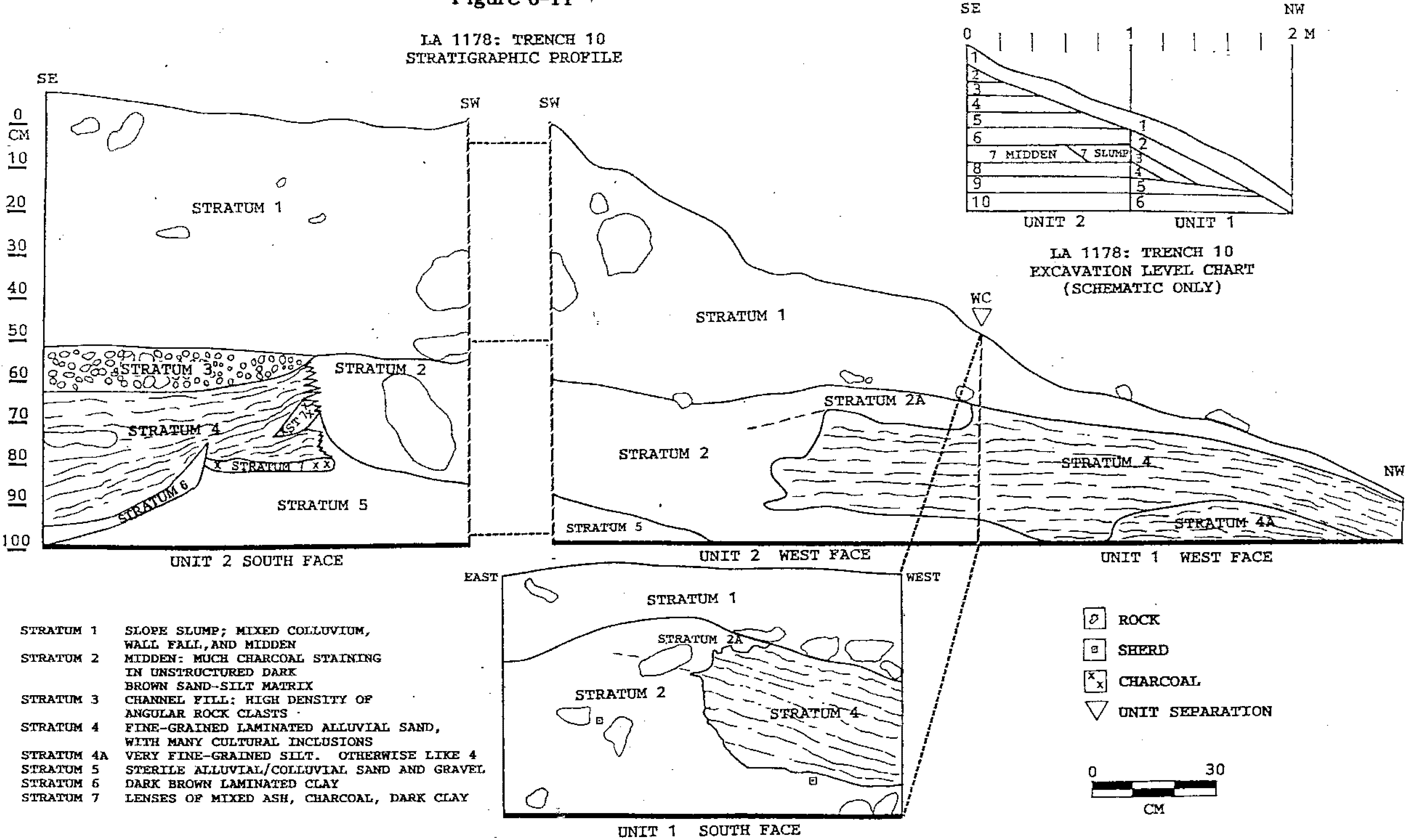
This trench (1 x 2 m; oriented 350°30') was placed at the gabion anchor key trench joining Sections C and D of the gabion wall system, just east (downstream) of Trench 9. Like Trench 9, it intercepted a complex stratigraphic sequence reflecting cut-and-fill erosional and depositional cycles. Unlike Trench 9, it is thought to have just reached a preoccupation (sterile) stratum (see Figure 6-11).

The basement stratum in this trench (Stratum 5) was an alluvial/colluvial sand and gravel deposit exhibiting little structure. It seems to have been culturally sterile and quite compact, suggesting that it may be of considerable age. Little of this stratum was intercepted in the trench; its relationship with overlying deposits suggests that it once stood much higher, but was eroded away by lateral channel flow.

It appears that the first erosional event that can clearly be recognized in this trench was the cutting of a north-flowing lateral channel into Stratum 5. This U-shaped channel then was filled with a rich, unstructured, midden deposit composed of dark brown sand, silt, ash, cultural materials, and charcoal flecks (Stratum 2).

Figure 6-11

LA 1178: TRENCH 10
STRATIGRAPHIC PROFILE



STRATUM 1 SLOPE SLUMP; MIXED COLLUVIUM, WALL FALL, AND MIDDEN
STRATUM 2 MIDDEN: MUCH CHARCOAL STAINING IN UNSTRUCTURED DARK BROWN SAND-SILT MATRIX
STRATUM 3 CHANNEL FILL: HIGH DENSITY OF ANGULAR ROCK CLASTS
STRATUM 4 FINE-GRAINED LAMINATED ALLUVIAL SAND, WITH MANY CULTURAL INCLUSIONS
STRATUM 4A VERY FINE-GRAINED SILT. OTHERWISE LIKE 4
STRATUM 5 STERILE ALLUVIAL/COLLUVIAL SAND AND GRAVEL
STRATUM 6 DARK BROWN LAMINATED CLAY
STRATUM 7 LENSES OF MIXED ASH, CHARCOAL, DARK CLAY

Subsequent to the infilling by Stratum 2, Stratum 5 was again cut by a lateral channel, which appears to have originated slightly to the east of the now-filled earlier channel. The later channel cut down across the old channel on a path running north-northwest, removing much of the upper part of the Stratum 2 channel fill except in the southern end of the trench. Although this channel was cut deeper than was the other channel at the south end, it flowed along a shallower gradient to its juncture with the creek, perhaps indicating an episode of creek alluviation.

The second channel appears to have experienced repeated cutting and filling. Discontinuous and truncated lenses of rather sterile clay (Stratum 6) and of culturally rich clay/charcoal mixtures (Stratum 7 upper and lower) were deposited in undercuts, eddies, and along the evolving channel floor, as was a very fine-grained interbedded silt member (Stratum 4a). Most of the second channel's fill, however, was culturally rich fine-grained sand, displaying complicated alluvial interbedding (Stratum 4).

It is not clear whether the refilled channel and adjacent Stratum 2 deposits were first beveled and retrenched by erosion yet again, or whether the final refilling event of the second channel occurred first. In either event, the resulting terrain consisted of a relatively flat surface composed of the top of Stratum 2, level with the top of the adjacent infilling (in Unit 2 only) of the later channel by Stratum 3, a coarse angular gravel lens with cultural inclusions.

Atop this surface was deposited the structureless Stratum 1, a mixture of slope slump colluvium, wall fall rock, and midden deposits.

The geomorphological record in Trenches 9 and 10 would seem to indicate that extensive erosion and redeposition events characterized this area of the site, thought to be the northern edge of a plaza, while the site was occupied. The Trench 10 Stratum 2 unit may correspond to Trench 9 Strata 2 and/or 5. The high-energy alluvial event indicated by the Trench 10 Stratum 3 deposit may correspond to Trench 9 Stratum 5a. The sterile deposits in Trench 10 Stratum 5 may correspond to the Trench 9 Stratum 5b deposits.

In this trench were found many of the small "ornamental" bird remains, two of the five pipes recovered on this project, a high proportion of the worked bone items, and the two drilled pendants.

This trench had an unusually low proportion of rhyolite and a high proportion of Grants obsidian.

The ceramic assemblage from this trench yielded two poolgroups with good counts (318 and 270 items). Only the upper poolgroup (slump) produced datable exotics: Arenal Glaze Polychrome (2 sherds) and Pinedale Polychrome (one sherd). Both poolgroups had high painted to unpainted Magdalena Whiteware ratios. Ratios of the various Magdalena utility types were not different between the midden and slump poolsets.

From Trench 10, a total of one possible dendro sample (FS 863), one obsidian sample (FS 827), and two thin-section samples (FS 835 and 843) were submitted. The obsidian sample was sourced as Grants Ridge obsidian. The dendro sample was judged too small for submission (Holloway). The sherd samples were of Magdalena Black-on-white and Magdalena Polychrome and both had crushed rhyolite temper. Pyroxene was occasionally seen in the polychrome sherd and plagioclase (oligoclase) in the whiteware sherd.

6.13 TRENCH 11

This trench was dug at the planned downstream key point for the main gabion and fence complex. Contractually specified to be excavated to a depth of three feet, it was dug to a depth of one meter. A motivation for the excavation was to examine the deposits for evidence of a reservoir-ditch-acequia complex reported by previous excavators in the area (USFS 1987). Placement was unfortunate for data recovery, as the profile of the creek wall below the bottom of the trench indicated that an ancestor of the lateral drainage which now flows some 10 m to the east had at one time flowed along the Trench 11 alignment.

Excavation confirmed these surface observations. The total fill of Trench 11 (see Figure 6-12) provided to be waterlaid and size-sorted sands and gravels, having frequent artifactual inclusions of denser materials, including large bones, ceramics, and an obsidian Garza-style point, but with little or no ash or low-density cultural remains such as charcoal and small bones. The recovered items almost certainly pertain to midden deposits upslope that were eroded by the old lateral drainage, or else to materials deposited directly into that drainage and subsequently sorted by stream flow. If a reservoir was present in the area south of Trench 11, it did not extend to the trench area. Ephemeral rock alignments discovered in the excavation of Trench 11 Unit 2 Level 4, and the possibly associated depositional changes, may be the remains of this feature complex or may indicate a later and less ambitious attempt to control the drainage. The sediment variations and the possible alignments are ambiguous; they may be the products of purely natural processes.

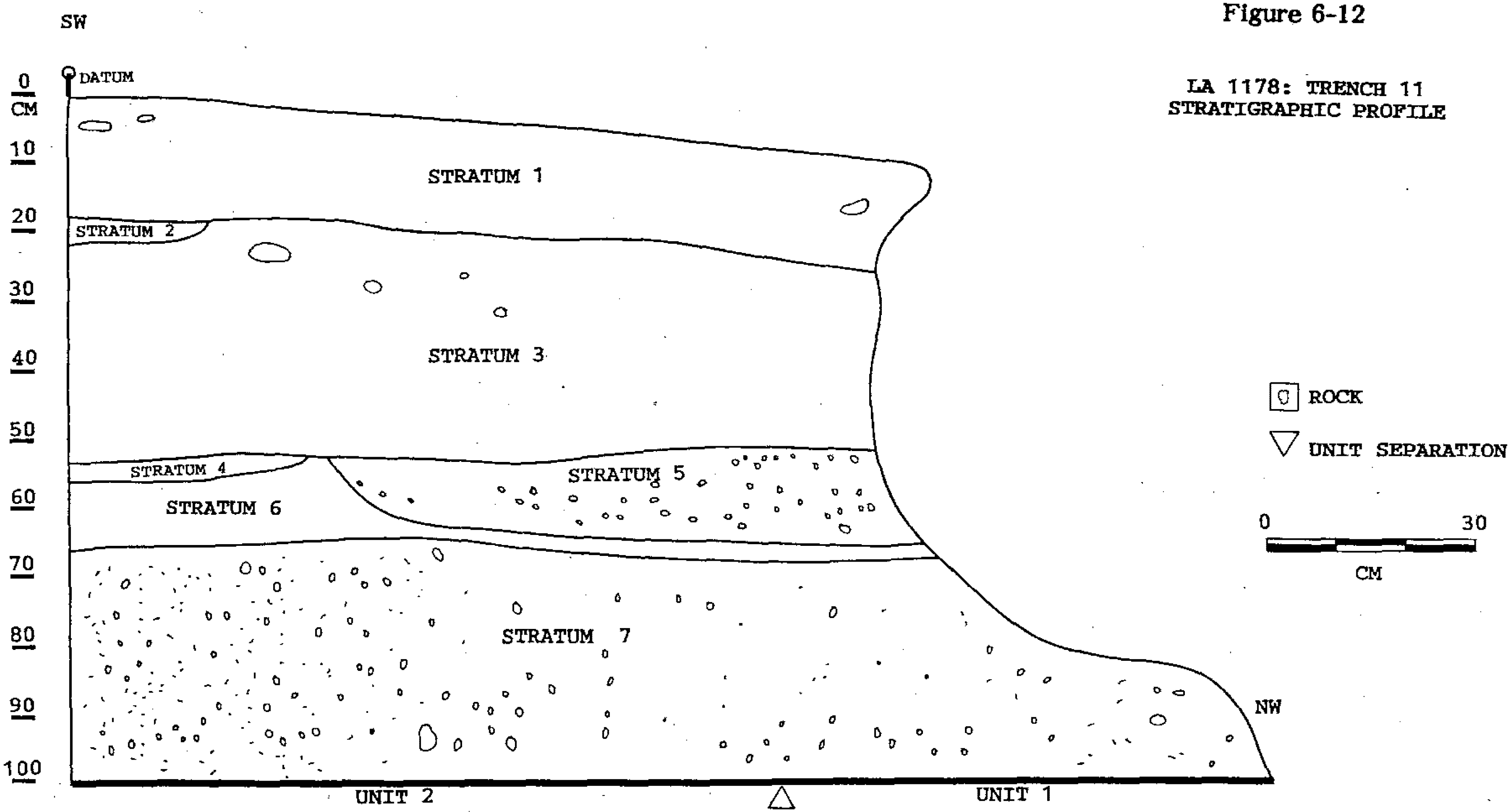
6.14 TEST PITS: "TRENCHES" 12-18

These small pits were dug to evaluate cultural deposits. They produced little or no cultural material. For data on placement, please refer back to Figure 4-1.

6.14.1 Trench 12

This 0.6 m cubical (0.216 m^3) test pit at the east end of Check Dam 1 encountered no cultural inclusions. Only moderate to high energy alluvial deposits were sampled.

Figure 6-12



LA 1178: TRENCH 11
STRATIGRAPHIC PROFILE

STRATUM 1 FINELY SORTED MICROLAYERS OF GRAVEL, COMPOSED OF ANGULAR ROCK CLASTS (1-3 MM DIA) AND OF MEDIUM SAND. A FEW HORIZONTAL TABULAR STONES
STRATUM 2 FINE SAND
STRATUM 3 AS FOR STRATUM 1, BUT ANGULAR CLASTS MORE VARIABLE IN SIZE AND LESS ABUNDANT
STRATUM 4 FINE SAND
STRATUM 5 ANGULAR ROCK AND COLLUVIAL GRAVEL (3-20 MM DIA)
STRATUM 6 FINE GRAVEL (1-2 MM DIA) ALTERNATING WITH SANDY SILT LENSES
STRATUM 7 DARK GRAY-BROWN SANDY LOAM WITH ABUNDANT UNSORTED (1-30 MM DIA) ROCK CLASTS

6.14.2 Trench 13

This 0.6 m cubical (0.216 m^3) test pit at the east end of Check Dam 2 encountered cultural materials totaling 11 sherds, 8 bone pieces, and a flake. Bedrock, encountered at 30-58 cm below surface, was the characteristic angular, jointed, south-dipping and steeply tilted rhyolite member used to construct LA 1178 and on which LA 1180 was built. Fill included small angular pebbles, sand, and some ash.

6.14.3 Trench 14

This 0.6 m cubical (0.216 m^3) test pit at the east end of Check Dam 3 encountered 14 sherds, 7 flaked items, and a piece of groundstone. Gravel, sand, and silty loam were present. The location of the test pit in a relatively flat portion of the drainage bench suggests that an in situ midden may be present nearby. No ash or charcoal were seen in the test pit.

6.14.4 Trench 15

This 0.6 m cubical (0.216 m^3) test pit at the east end of Check Dam 4 encountered only a sherd in Level 1 and a bone fragment in Level 4. Cobble pavements in Levels 3 and 6 may represent cultural features or natural cobble deposits. Burning may have been present atop the Level 3 cobbles, but little or no ash and no charcoal were seen.

6.14.5 Trench 16

This 0.6 m cubical (0.216 m^3) test pit at the west end of Check Dam 4 encountered artifacts only in Levels 2 and 3. Seven sherds and two flakes were collected. Soils were typical mountain slope colluviums, except for Level 6, where a mottled, bright yellow, well-sorted sand was encountered. This deposit does <u>not</u> appear to be geologically consistent with its surroundings; it may represent a cultural stratum, such as sorted reservoir fill. It has the appearance of fine mine or mill tailings.

6.14.6 Trench 17

This 0.6 m cubical (0.216 m^3) test pit at the west end of Check Dam 3 encountered artifacts on the surface and at all depths except for the final level. A total of 28 sherds and a flake were collected. Soils appear to represent very sparse dispersed midden; fill consisted of variably light to dark mottled brown silts and sands with larger angular rock inclusions. Sparse ash staining may be present, but no charcoal was noted.

6.14.7 Trench 18

This 0.6 m cubical (0.216 m^3) test pit at the west end of Check Dam 1 encountered rich midden deposits apparently similar to those found nearby by previous investigators (E. Garber, personal communication 1987). The surface and Level 1 were sterile, but a pipe fragment, grayware sherds, and an obsidian flake were found in Level 2. Level 3 produced a flake and three black-on-white sherds. Levels 4-6 contained dispersed charcoal fines, two flakes, an obsidian flake, and 18 more whiteware and grayware sherds.

6.15 STRUCTURAL RUBBLE

Observations were made in the field on the amounts of possible structural stone recovered in Trenches 1 through 10. In general, any stone of a size and shape suggesting that it might have been a wall element was set aside during screening of deposits. This included all definite walls dismantled in the course of excavation. As each excavation level was completed, the stones from that level were weighed and the weight recorded. Any stones judged to be heavily pecked or ground were bagged for analysis; the remaining stones were discarded.

A cubical metate (FS 821) from wallfall context in Trench 10 was carefully compared to the probable structural rubble, and was judged to have been made from the same material, or of similar material of similar density, as the bulk of the rubble materials. Its approximate dimensions were 240 x 330 x 120 mm; its mass was 16.8 kg. Its density was therefore about 1770 kg/m^3, so this conversion factor was used to convert the recovered rubble mass data to volume data (Appendix I). These data are not further analyzed here, but are included for reference in the event that formal reconstructive excavations are ever carried out in the areas trenched in the FS/CGI project.

The reader should note that the implied volume estimates given in Appendix I are minimum estimates; they assume that walls were laid up as perfectly packed stones with no included mortar or air spaces. Realistic estimates of the amounts of wall volume actually represented would probably fall in the range of 1.5 times and 2.0 times the estimated volumes calculated as described here; the higher figures would allow for mortar, wood, and air space inclusions consistent with the few essentially intact walls which were observed in previous excavations at LA 1178.

6.16 CONCLUSIONS

Although insufficient data were recovered to allow confident site organizational reconstruction, the FS/CGI excavations have demonstrated that an additional roomblock, probably in part two stories in height, lies in that area where Green's map (refer back to Figure 2-1) showed a questionable structure linking Structure I and Structure II (Tainter's Structure III). This structure was built atop existing midden deposits, some of which may have been deposited as early as AD 1050.

This structure appears to have been squared to approximately 20° east of north, rather than sharing the orientation of about 355° east of north that is exhibited by the exposed adjacent sections of Structure 1N and Structure III (refer back to Figure 4-1). The structure's north-south walls were typically founded in existing midden deposits, in trenches about 40 cm wide and 30 cm deep. Footer trenches were partly backfilled with sand or adobe, upon which the footer course of roughly cubical rhyolite blocks, typically of about 25 cm length, were laid. The footer trench was sometimes lined with small rhyolite, tuff, or sandstone slabs before being backfilled to grade.

Atop the footer course, walls were laid up in two parallel, faced, interlocking rubble courses (doubleface coreless) with an undetermined but large proportion of mortar being used. Typical elements were tabular and ranged around 20 x 15 x 10 cm in size.

Room floors were laid directly onto the substrate (midden or native soil). These were remarkably compact, given that they were made of angular silt-sand soil, rich in rhyolite, feldspar, and quartz but that they lacked clay in greater than trace amounts. Rectangular subfloor slab-lined adobe fireboxes were emplaced in floors, oriented with the room. In at least one case, a domiciliary room's firebox was apparently paved over and the room converted to a food storage room.

One area where Green showed suspected structures, the vicinity of the FS/CGI Trenches 8A, 9, and 10, appears to have not been built upon. Rather, the area seems to have been a plaza or passage crosscut by a surface drainage that eroded and refilled one or more times in the course of occupation. The refill soils in this plaza/passage/channel and in adjacent rooms and roomfill seems to have been richer in ornaments, ceremonial items, and high quality lithic materials than were other areas of the site. In only one other location, the westernmost room encountered in Trench 5, were similar deposits seen. This room and the Trenches 8-10 area seem to have contained an anomalously high proportion of small bird bones, most of which seem to have come from species having exceptionally colored and colorful feathers. All these ceremonial/exotic assemblage components may relate to use of the large kiva thought to lie a few meters south of the rooms exposed in Trenches 6 and 7.

Numerous exotic ceramic types were identified in the FS/CGI mitigation study. Of these, most were represented by very few sherds. An exception seems to be the concentration of El Paso Polychrome in Trench 8A; this may represent a single large jar potdrop.

A large proportion of the other exotic ceramics were concentrated in the rich, deep, apparently extramural midden encountered in Trench 2. This midden is the only area of the site so far known where exotic decorated wares approach the abundance of the indigenous Magdalena white and redwares. This midden deposit may indicate the presence of a (perhaps alien?) group within Gallinas Springs Village, more involved in external trade than were the bulk of the residents of this rather inturned community. Alternatively, it may indicate the presence of a high status midden or of a period in which the pueblo was occupied by invaders. Ceramic affiliations of this midden, and, in fact, of the entire exotic assemblage, appear to be dominantly northern and western; with the exception of a few

sherds of Casa Colorado Black-on-white, Elmendorf Black-on-white, Chupadero Black-on-white, and Jornada ware, the only southern and eastern ceramics present are the El Paso series (a possible potdrop and a few isolated sherds).

Despite the terminal PIII radiocarbon dates and the Glaze A and Glaze White Mountain/Zuni/Acoma ceramics found in the newly defined parts of Structure III, it is evident that occupation of the town continued for some period of time after ca. AD 1290-1300; the most recent radiocarbon date came from subfloor midden under a habitation room which was later 1) converted for use as a storage room; 2) actually used for storage; 3) abandoned or lost in a fire; and 4) filled by subsequent dumping activity. This series of observations alone strongly suggest that LA 1178 may not have been abandoned until perhaps the middle decades of the fourteenth century.

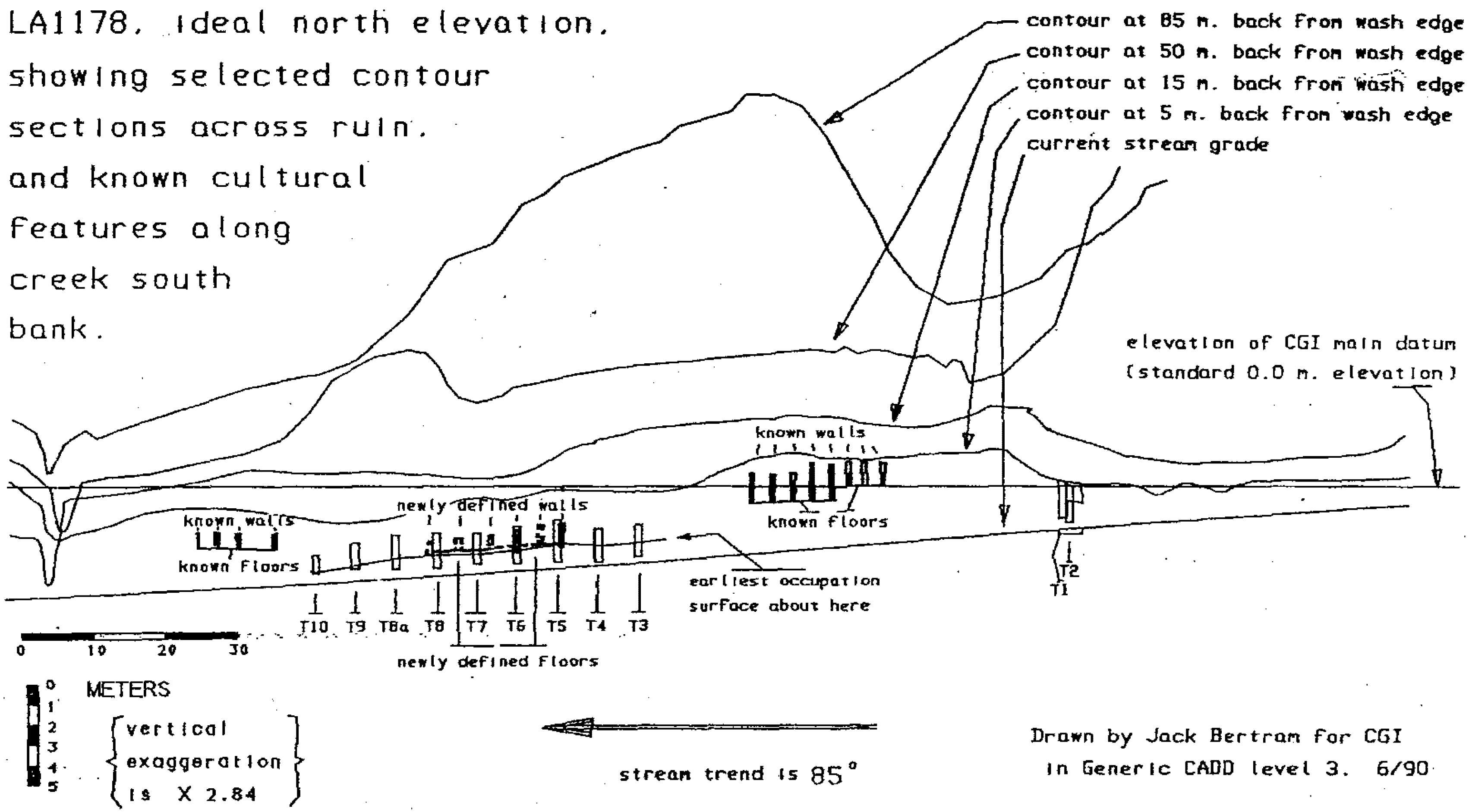
During the occupation of LA 1178, significant changes in the hydrological regime seem to have occurred. The presence of lateral stream tributary channel cuts below present stream grade, the presence of an occupation surface less than a meter above current dry stream grade (Figure 6-13), the absence of any flood-deposited main stream alluvium within the cultural deposits lying on that surface, and the present soil-flow processes observed in the field all lead to the same conclusion.

At the time of occupation of LA 1178, Gallinas Creek must have been significantly more entrenched than is now the case. The water table was therefore much lower at streamside than is presently the case. Soil liquefaction and slumping were probably not serious concerns, although they demonstrably are causes for present concern.

Since the grade of Gallinas Creek is controlled not far downstream by rock-cut sections of the stream course, we may conclude that recent faulting or tilting has substantially changed the regime of Gallinas Creek, which clearly is now aggrading and beginning to meander. This could be the result of movement along the Gallinas Mountain east fault, or it could relate to ongoing subsidence to the west. Generalized batholithic uplift, like that which is currently raising the Rio Grande at the mouth of the Rio Salado at a rate of several centimeters per decade, may also be occurring downstream along the east flank of the Gallinas Mountains. The San Agustin Basin is known still to be undergoing dramatic relative subsidence, and the Magdalena-Bear-Gallinas fault complex is also patently still active.

In her review of the draft submission of this document, Garber commented that less dramatic, non-tectonic processes might also account for the observations and inferences presented in the preceeding three paragraphs. She especially singled out drought-precipitation pattern changes and cycles; she might well have added the poorly understood but patently important effects of modern livestock grazing and timbering practices to the list of alternative causes. She also queried the water-table inferences, noting that a currently elevated water table would not account for the missing spring at Gallinas Springs Ruin. Her points are well-taken.

Figure 6-13



LA1178, ideal north elevation, showing selected contour sections across ruin, and known cultural features along creek south bank.
contour at 85 m. back from wash edge
contour at 50 m. back from wash edge
contour at 15 m. back from wash edge
contour at 5 m. back from wash edge
current stream grade
elevation of CGI main datum (standard 0.0 m. elevation)
known walls
known floors
known walls
known floors
newly defined walls
newly defined floors
earliest occupation surface about here
T10 T9 T8a T8 T7 T6 T5 T4 T3
T2
T1
0 10 20 30
METERS
0 1 2 3 4 5
vertical exaggeration is X 2.84
stream trend is 85°
Drawn by Jack Bertram for CGI in Generic CADD level 3. 6/90

The author would argue, however, that the presence of bedrock in the streambed not far downstream indicates that the current stream grade is controlled mainly by tectonic uplift. One assumes that the residents of LA 1178 were not so foolish as to build high walls in wet soils or so close to streambed grade that they would be flooded regularly. Given the elevation of the old occupation surfaces above current streambed grade, this must mean either that 1) relative uplift has occurred just downstream, resulting in post-abandonment raising of the grade, which has aggraded enough approximately to maintain its old pitch and overall regime, or 2) the stream grade at the time of occupation was scoured much deeper at the ruin and hence had a much lower pitch at the time of occupation than is now the case. In either case, the stream grade would have been more entrenched at the Ruin, the water table would have been concomitantly lower (none of the local soils are truly impermeable), and springs certainly would have flowed in wet periods from points along the stream bank which are now buried by the stream alluvium. Of course, these springs may well still flow, but their output would now be concealed by being discharged underground into the deep sands and pebbly alluvia of the partly refilled creek bed. It follows in either case that the sediments on which LA 1178 were built would have been more stable at occupation than they now are.

Whatever the dynamics behind the entrenchment and refilling of Gallinas Creek, it is clear that the creek bed aggraded substantially after abandonment, producing the high benches which overlie cultural horizons upstream and downstream from LA 1178. This was followed by a second entrenchment episode, which may now have terminated; currently, the stream course appears to be developing meanders, perhaps indicating that it is once again aggrading. In any event, the stream at occupation was more entrenched, and may (under the uplift hypothesis) have flowed more sluggishly along a bedrock channel of lower pitch than is now the case.

Chapter 7

LITHIC ANALYSES

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7.1 INTRODUCTION

Lithic remains recovered from LA 1178 include chipped stone debitage, chipped stone tools, groundstone, and stone ornaments. This chapter will provide a discussion of all of the items recovered from the limited excavations conducted in September 1987. Lithic debitage represents the largest category of materials examined. This discussion will focus on the numbers and types of items recovered and a spatial discussion of the debitage by Trench and by pooled stratigraphic units.

The chipped stone tools recovered from the site were limited to 64 non-formal tools as indicated by edge utilization, retouch, and/or use wear and 23 formal tools interpreted as bifaces and projectile points. A wide variety lithic materials were utilized for both non-formal and formal tools.

Groundstone recovered from the excavations was extremely limited with only 24 items displaying evidence of intentional grinding. These items include metate fragments, manos, polished pebbles, and abraders.

A glossary of terms used in the analysis appears in Section 7.5.

7.2 DEBITAGE

The debitage analysis at LA 1178 consisted of the categorization of 1403 items divided among nine material types. Methodologies for the debitage analysis are described below. In general, due to the limited expanse of excavation conducted at the site, when compared to the overall size of the deposits, information recovered represents a very limited picture of the lithic remains present at the site. The debitage analysis provides a brief exploration of the types of reduction techniques that were employed by the inhabitants of LA 1178 and provides information on the material type selection criteria that were employed.

Based on the budgetary and research limitations imposed by the small excavations into incompletely understood deposits, it was felt that a two stage assessment of the lithic debitage would be the most efficient and productive method for characterizing and analyzing the lithic debris recovered from LA 1178. The first stage was to be a rough sort of the entire collection, and the second an intensive analysis of a portion of the collection. As originally

conceived, the rough sort would be used to characterize the assemblage and research potential of the collection. The detailed analysis was designed to concentrate on high potential in situ deposits to test hypotheses generated from the rough sort.

When the original proposal was prepared, it was speculated that there would be a full analysis conducted on approximately 1,550 lithic items (67% of total) exclusive of groundstone (Chambers Group Inc., 1989). Unfortunately, this did not account for the extremely high percentage of lithics being classified as "junk" (natural rock fragments). Other than formal tools (23), groundstone (24), and stone ornaments (4), 2,328 lithics were collected during the 1987 excavation. Of these, 925 pieces (40%) were classified as junk during the rough sort. The rough sort thus generated a total lithic debitage sample of 1,403 artifacts, almost 150 less than that anticipated for the second stage detailed sort. This large percentage of natural rock that appears to be the product of natural process (i.e., colluvial movement and weathering) were recovered during "Bertram's maximal collections" taken to determine if infield biases are an important factor in lithic recovery (Sec. 4.4).

The second intensive analysis included lithics from all of the high quality in situ provenances and lower quality slope mix deposits. Also included were one hundred percent of the lithics recovered from Trench 18 and assumed low quality Trenches 11 through 17 as they contained extremely low artifact counts (Chambers Group, Inc., 1989). There were 780 (55%) pieces of lithic debitage analyzed during the second phase. Of these, 608 (80%) were recovered from five trenches (2, 7, 8, 9, and 10). Based on this disappointing number of total lithics, the large number of trenches with a very low percentage of lithics and the limited number of lithics from in situ deposits, it was felt that the data base was generally unsatisfactory for meaningful statistical analysis. However, as only Keller's M.A. Dissertation (1975) describes the debitage at LA 1178 in any detail, and then with only 475 pieces of "Waste Chippage" and 12 cores, it is hoped that this discussion will characterize these artifacts in a manner that will be an aid and foundation for future research and data recovery conducted at Gallinas Springs. As very few intra site chronological changes were distinguished from other more sensitive and potentially more sensitive cultural manifestations (i.e., dendro samples, radiocarbon samples, ceramic typologies), there was no attempt to document changes in lithic utilization through periods of site occupation.

7.2.1 Methodology

7.2.1.1 Rough Sort

Recent lithic analysis efforts have indicated that detailed measurement of debitage and observation of other than the most basic debitage attributes rarely returns usable or interpretable data commensurate with the considerable time and money costs associated with detailed recordation (Bertram 1989c; Bertram 1989a; Bertram n.d.). The rough sort was, therefore, conceived as a fast identification of culturally produced versus natural pieces of chipped stone, and as an efficient and inexpensive method for characterizing the recovered debitage. The rough sort form recorded provenience and context information and item counts for each of the five size classes, nine material classes and two completeness classes (see

Appendix F). One rough sort form was completed for each of 253 Field Specimens (FS) containing chipped stone debris or lithics rejected as groundstone. All of the attributes described during the rough sort were visually identified with the naked eye.

As length patterns have been found to be useful for characterizing debris in terms of differences between mechanically defined types and assemblages in previous lithic debitage studies, size categories were utilized to characterize the recovered lithics (Bertram 1989c). The size categories were:

Very Big (equal to or greater than 5 cm)
Big (less than five and equal to or greater than 2.5 cm)
Medium (less than 2.5 and equal to or greater than 1.5 cm)
Small (less than 1.5 and equal to or greater than 0.5 cm)
Tiny (less than 0.5 cm)

Size categories were based on the longest dimension of the artifact. A template with concentric circles of known diameters defined the size categories. The artifact was placed within the drawn circles until it was completely contained within the smallest one possible, which became its recorded size.

The nine material codes basically represent six categories: Rhyolitic Welded Tuff, Chert, Quartzite, Petrified Wood, Obsidian and Other. The Obsidians were subdivided into four categories: Grants Ridge, Jemez Mountain, Other Obsidian and Unknown. The Rhyolitic Welded Tuff category rapidly became a catch-all for all igneous materials other than those more closely resembling basalt and andesites. The Other category was most frequently use for the basalt-like materials. Other less common lithic materials (i.e., limestones) were also listed under Other, however, they were described (if possible) in a section established for notes.

Chalcedonies and cherts were lumped together under the Chert category, as were quartz, quartzites and quartzitic sandstones under the Quartzite category. There were some excellent rhyolites observed in the lithic collections that were originally recorded as chert; however, after viewing numerous artifacts it was apparent that they were indeed rhyolites which had few if any visible phenocrysts. The Petrified Wood category was infrequently used. If there was any uncertainty involved as to whether the item was petrified wood, it would be placed in the category that also represented the material (i.e., Chert). The Obsidian categories were based on a material pre-sort and subsequent sourcing of fifteen pieces which were chosen to represent the range of visually different specimens (see Appendix F).

The rough sort also recorded completeness for each artifact in each material and size category. This division was made only for flakes, since all angular debris (shatter) was recorded as incomplete. A flake was recorded as complete even when it only retained a portion of the original proximal and/or distal end(s). In these instances it was felt that the missing portions could be extrapolated for descriptive purposes.

The rough sort form also contained a box for a brief description of any observed tools. All tools, except cores and biface fragments (recognizable bifaces had been previously pulled), were recorded on the overall size and material form. They were thus viewed as modified and/or utilized lithic debris. This form also contained a line to record the counts of and any comments on items thought to be non-cultural ("junk") and three lines for any notes or discussions. The "junk" line proved to be useful in accounting for the numerous rocks that were collected during "maximal collection" strategies conducted on some units and levels as a potential check on the bias created by field decisions on the collection of lithic artifacts. It was suspected by the field director that the lithics collected from screens could be affected by a screeners' biases and by the degree of visibility (i.e., amount of soil and/or patination adhering to the recovered lithics). The samples listed as maximal collection were carefully examined to determine whether they were the intentional by-product of cultural lithic reduction. This process was conducted in a multi-stage sort. A problem as conceived by the sorter tended to be the lack of original context, i.e., the tens to hundreds of rocks still discarded in the field. As previously noted in Section 4.4, "maximum mode" collections included any lithic object which might possibly be artifactual. This collection strategy frequently excluded numerous rocks and rock fragments which might have given a better indication as to the range of lithics produced from natural processes.

The material type of "junk" was not noted unless it differed from the types being included in the Rhyolitic Welded Tuff category which comprised approximately 98% of this category with quartz crystals and fragments comprising most of the rest. During the sort of lithics recovered from Trenches 2 and 3, the numbers of angular versus rounded "junk" were distinguished. This distinction was dropped prior to sorting Trench 4 as the vast majority of non-cultural items were angular pieces or fragments of rhyolitic welded tuff. Seven percent of the "junk" in Trenches 2 and 3 was somewhat rounded, 0.05 percent from Trench 2, and 12 percent from Trench 3.

Of the trenches and levels in which a maximum collection strategy was employed, only six were so labeled on their bag. These six samples yielded 190 objects, 155 (excluding ceramics, bone and ground stone fragments) were classified as "junk" (81.6%). Other maximum level collections were also collected, however, their identity can only be inferred from the "junk" totals (see Appendix F).

The rough sort was conducted in the same sequence as the test trenches were numbered, i.e., beginning with Test Trench 1 and proceeding in order through Test Trench 18. After a few sorts to get a feel for the collection, a set of criteria were developed in order to attempt a consistent handling of the material. The primary observation centered on whether the lithic item contained a definable ventral surface. The ventral surface was generally defined as the surface situated opposite a face containing cortex or facets from previous scarring resultant from natural battering and/or flaking. A face was also considered ventral when it had an associated platform and/or when it contained remnants from a bulb of percussion and/or conchoidal lines of force. If present, the observed lines of force had to be generated in a direction compatible with the direction of impact required for flake removal. An apparently culturally derived lithic item, with patterned flaking initiated on or along the ventral lateral, would have been considered a tool.

The item was assumed to be angular debris if there were no perceptible ventral surface on a piece of debris that appeared to be culturally derived. To appear culturally derived, the lithic had to have surfaces and/or facets that appeared to represent remnants of positive and/or negative flake scars. Again these scars should exhibit remnants of a platform(s), bulb of percussion(s) and/or lines of force, and form a shape with visible similarities to the size and shape associated with cultural derived flakes.

A core differs from angular debris in that there must be two or more distinct flake scars measuring over a centimeter in length and there must be a remnant of the platforms from which the flakes were struck.

Items were categorized as the product of natural processes ("junk") if they were extremely blocky, angular, or rounded without exhibiting any of the above flake attributes. Other factors in a "junk" determination were: the only possible ventral surface appearing to be a natural fracture plane; a scar or facet that was not fluid, i.e., numerous step fractures and/or a highly irregular face; a ventral surface whose distal end changed direction, jutting out, away from the face at an approximate 30 to 50 degree angle; or an angular fragment with an attribute or two that indicated non-cultural origins, i.e., they were not consistent with the direction of flake removal from a nodule. A problem resulted from the wedge or tapered shaped pieces of rough, coarse grained, welded tuff that could have been medial or distal flake fragments, possibly removed during masonry wall block construction. The nature of this material dictated that no non-cortical surfaces could be very fluid and regular. However, based on the tapered, wedge-like shape and frequently on possible bulb of percussion remnants, most of the pieces that fit this description were included in the rough sort as by-products of human manufacture, especially during the first half to two-thirds of this sort.

This assumption may or may not be valid, since most of the rough, coarse-grained, welded tuffs tended to be wedge shaped, which may be indicative of a consistent natural weathering phenomena. As this pattern became more apparent, the classification became less confident. The consistent lack of an apparent striking platform was the main factor in creating doubt as to the potential cultural association of many of the lithics.

7.2.1.2 Obsidian Sorting

The author made a pre-rough sort of all obsidian debitage as a preliminary step to sourcing as many of the potentially different obsidian types as possible. The pre-sort separated approximately eight visibly different categories, of which two samples of each were submitted for sourcing, if possible. The obsidian pre-sort resulted in the submittal of 15 samples for a geochemical characterization by x-ray fluorescence analysis at the trace element level. This characterization was supervised by the Obsidian Hydration Laboratory, Eastern New Mexico (see Appendix F). The results of the x-ray fluorescence and subsequent discriminant function analysis were interpreted as indicating that the fifteen samples likely were derived from five distinct obsidian locations: five from Grants Ridge (Northwest N.M.), four from the Jemez Mountains (Northcentral N.M.), three from Beaver Creek (Southcentral Colorado), two from the San Antonio/No Agua Mountain area (Northern New Mexico), and one from

the Red Hill locale (Western New Mexico). Many of the observed materials were visually similar, thus the larger samples were submitted for sourcing. Unused portions of the six largest samples were returned after the x-ray fluorescence. These lithics (four sourced as Grants Ridge and two as Jemez Mountain) were pulled and used for comparative purposes.

For recording purposes, the obsidians were divided into four categories: Grants Ridge, Jemez Mountain, Other Obsidians, and Unknown. It was felt that the Grants Ridge and Jemez Mountain obsidians were present in large enough quantities and were frequently distinct enough to reliably identify. The obsidians sourced as either Beaver Creek, San Antonio/No Agua Mountain, and Red Hill, along with any other potential obsidians that were not sourced, were lumped in the Other Obsidian category. The forth category, Unknown, was used when the obsidian appeared to have attributes similar to two or more of the sources. Three of the eight obsidians classes originally thought to be visually distinct were sourced as Grants Ridge. Their descriptions were: 1) dark grayish black appearing opaque except for extremely thin edges; 2) very lustrous black to dark gray with several white spherulites; and 3) semi-translucent to partially translucent black with visually darker flow lines. As these samples were similarly sourced, a broader descriptive definition was generated as an attempt to combine these attribute descriptions.

One of the two pieces sourced as San Antonio/No Agua Mountain was visually similar to those described by the third Grants Ridge description other than flowlines grading from black to reddish black. As the portion of this sample piece with consistently black flow lines was extremely similar to some of the Grants Ridge lithics, an attempt was made to distinguish these two sources based on the degree of translucency. The semi-translucent pieces were coded as Grants Ridge, while the translucent pieces were coded San Antonio/No Agua Mountain (visually, this frequently proved to be a very difficult distinction to make).

Samples from three of the visually distinct groups sourced as Jemez Mountain obsidians. These included pieces which were: 1) translucent black; 2) translucent brown; and 3) translucent black with numerous tiny white inclusions. Unfortunately, the visual sourcing was further refuted when a second translucent brown obsidian was sourced as San Antonio/No Agua Mountain, and a translucent black with numerous tiny white inclusions was sourced as Red Hill rather than as Jemez Mountain obsidian. As there appeared to be no visual difference between the translucent brown obsidians these were consistently coded as Unknown.

The obsidian material descriptions utilized in the rough sort were generated in accordance with ENMU Obsidian Hydration Laboratory sourcing. A brief description of the visual distinctions employed during the rough sort are as follows:

> Grants Ridge: black to grayish black, frequently opaque grading into semi-translucent on thin edges, at times banded, waxy luster, frequently containing spherulites ranging up to a millimeter in size.
>
> Jemez Mountain: translucent black without inclusions or with some degree of unevenly distributed white and/or black inclusions.

Red Hill: translucent black with an abundance of evenly distributed inclusions giving a cloudy gray appearance.

Beaver Creek: Opaque dull to grayish black, opaque black with tinges or swirls of brownish-black and/or greenish black, with a relatively smooth (non-cellular) cortex or cortex resembling a silver sheen.

San Antonio/No Agua Mountain: clear to translucent black with black and/or reddish brown flow lines.

A potential origin for the obsidians sourced from far northern New Mexico and southern Colorado could be the Rio Grande alluvial terraces. However, as only 14% of the obsidians with classifiable cortex appeared to be stream battered, it appears that most were not collected from alluvial deposits (see Section 7.2.3). Three of the four obsidians with battered cortex appear to have been derived from the Jemez Mountain area and the forth was classified as Unknown. All four could have been recovered from Rio Grande alluvial deposits, indicating that this is a possible source for an unknown percentage of Gallinas Springs obsidians.

Another possibility is that during some periods of occupation at Gallinas Springs Pueblo local obsidians were not available to the residents. This lack of local availability could have necessitated acquisition of obsidians from sources located further away, i.e. Beaver Creek and San Antonio/No Agua Mountain. However, as the majority of visually classifiable obsidians were Grants Ridge and Jemez Mountain (81% excluding Unknown), these more local sources appear to have at least been periodically available. Keller (1975) also hypothesized that the majority of obsidians recovered during the 1974 Western Michigan University Field School excavations, were derived from the Mount Taylor area.

The Obsidian Hydration Laboratory included a disclaimer indicating that it is possible that not all of the sourced artifacts are classified correctly and that this should be kept in mind when interpreting the results. The probabilities for the accurate sourcing of all 15 samples are good with none less than 75%. Although plausible, it seems improbable that obsidian was obtained or traded in from Southcentral Colorado or even from the Northcentral portion of New Mexico when there are several documented sources within Central and Southwestern New Mexico and in Southeastern Arizona (Shackly 1988). Visually, the obsidians sourced as Beaver Creek and San Antonio/No Agua Mountain, also tend to fit, in varying degrees, the descriptions of several of the closer sources located in New Mexico and Arizona (i.e., Mule Creek, Cow Canyon, Tularosa Basin and Antelope Wells). It is hoped that future studies in this area will continue to explore the source locations of obsidians.

7.2.2 Results of Rough Sort

The lithic debitage collected from Trenches 1 through 18, suggest that the inhabitants of Gallinas Springs Pueblo predominately employed a simple lithic technology primarily utilizing local rhyolites and welded tuffs. A good percentage of the rhyolites were well suited for

knapping as evidenced by the numerous pieces exhibiting "classic" flake morphology. Of the 1403 pieces of chipped stone debitage collected, 996 (71%) were Rhyolitic Welded Tuffs (see Table 7-1). All of the larger excavation units (Trenches 1 through 11) were dominated by Rhyolitic Welded Tuffs, ranging in representation from 64% to 85%. The Chert content in the larger trenches ranged from 6.1% (Trench 7) to 14.3% (Trench 4), and the Obsidian distribution varied greatly, ranging from zero (Trench 5) to 18.2% (Trench 8). The number of Quartzites ranged from zero (Trenches 4 and 6) to 8.8% (Trench 9). The Other Igneous category had the same zero (Trenches 1, 3, 5, 6, and 11) to 8.8% (Trench 9) range while occurring in only 64% of the trenches.

The Rhyolitic Welded Tuffs tended to run larger than lithics of other materials. That would be expected considering the known localized source(s). The Rhyolites were distributed as follows: 40 (5%) very big, 391 (39%) big, 347 (35%) medium and 218 (22%) small (see Appendix F). Almost 50% of the very big size category were complete flakes as were 30%, 27%, and 24% of the big, medium, and small size categories respectively. A reasonable portion of the very big and big pieces of debitage (not selected out and counted) tended to grade into welded tuff. These were frequently hard to classify as intentionally cultural, and if so, whether they were the byproduct of wall block shaping or of edge production.

Obsidians accounted for 10.3% and the Chert/Chalcedonies 9.3% of the total. The Quartzites, Other Igneous, Petrified Woods, and Limestones accounted for the remaining materials, with none containing over five percent of the sample. The majority of Obsidians, 58% (84 of 144), were visually sourced as originating from Grants Ridge. The Jemez Mountain, Other Obsidian, and Unknown Obsidians accounted for 14%, 17.5% and 10.5% respectively.

Other than one large piece of Jemez Mountain obsidian angular debris, the collected obsidians were fairly small. Of the 144 Obsidian lithics, 43 (30%) were medium and 98 (68%) were small, with 29% (7 medium, 33 small, and both tiny) being complete flakes. Due to the tendency for obsidian to break in even conchoidal fractures, it is generally an excellent material for controlled flake removal thus pressure flaking. This technique is frequently utilized for biface thinning and edge sharpening and generally produces small debitage. Based on its flakability, one could expect a large percentage of good obsidian nodules to be utilized without generating an excessive amount of unnecessary waste. As obsidian is one of the better materials for flake production, their configuration is often determined by the parent materials size and shape, internal flaws and/or the intent of the knapper. The overall small size of the obsidian debris suggests that many if not most of the original nodules were also fairly small. Only one obsidian pebble core (maximum dimension of 3.2 cm) and two tested cobbles (maximum dimensions of 2.4 and 2.2 cm), were recovered during this project.

The Cherts and Petrified Woods (four) were similar to the Obsidians in that they also tended to cluster in the medium and small size categories. Of 131 Chert lithics, 22 (18%) were big, 66 (50%) were medium and 43 (32%) were small in overall size. Twenty-seven (21%) of the Cherts were complete flakes.

Quartzites and Other Igneous (primarily basalts) composed 4.8% (67) and 3.8% (54), respectively, of the collected debitage materials. Overall, the Other Igneous lithics tended to run larger than the Quartzites. The majority of Quartzites (42%) were medium in size (3% VB, 27% big and 28% small) while 44% and 41% of the Other Igneous were big and medium respectively. Of these, 28% of the Quartzites and 33% of the Other Igneous lithics were complete flakes.

The distribution of complete flakes tends to remain fairly constant with all of the dominant material types, except Other (Igneous) ranging between 27% to 29%. Thirty-three percent of the Other Igneous materials were complete flakes. Seven limestone lithics were also recovered during excavations.

Most of the lithic debitage was collected from the three east end trenches (Trenches 8, 9, and 10) or from the midden(s) located in Trench 2. The lithics from these four trenches comprise 68% of the recovered debitage with Trench 2 containing 208 (15%), Trench 8 containing 280 (20%), Trench 9 containing 159 (11%) and Trench 10 containing 314 (22%) (see Table 7-1). These same trenches contained 65% of the Rhyolitic Welded Tuffs, 69% of the Cherts, 78% of the obsidians, 78% of the Quartzites and 87% percent of the Other Igneous. Trench 8 contained 35% of the Obsidians with: 60% of the Grants Ridge in Trenches 8 and 10; 60% of the Jemez Mountain and 68% of the Other Obsidians in Trenches 2 and 8; and 53% of the Unknown Obsidians in Trench 8.

The east end trenches (8, 8a, 9 and 10) contained 52% of the total lithic assemblage. These trenches tended to differ from the western trenches by containing 75% of the Quartzites, 80% of the Other Igneous (91% when excluding the midden in Trench 2), and 67% of the Obsidians (78% when excluding Trench 2). The east side trenches contained 56% of the Cherts. This appears to be a function of a larger data set since the percentages of material types per trench are similar to those located on the west side. The west side trenches (1 through 7) were dominated by Rhyolitic Welded Tuffs which formed 78% of the debitage from this side of the site.

7.2.2.1 Pooled Stratigraphic Data Base

A secondary data base was generated by Bertram, using the trenches and stratigraphic levels with relatively large item counts for possible correlations. This data base frequently combined companion strata in an attempt to the generate cells with significant numbers. This data base was constructed using size categories big, medium, and small. As there were very few entries for the very big and tiny categories they were omitted from further analyses. The material types utilized consisted of: Rhyolitic/Welded Tuff, Chert, Quartzite, Other, and Grants Obsidian. These were the most common materials noted during the rough sort. Artifacts were then further subdivided as to completeness for the size and material categories (see Table 7-2). This data base contains 87.5% of the total lithics recovered. It did not include materials from Trench 6, or 11 through 18 as there were not enough items to warrant their inclusion into the data base.

Table 7-1

DEBITAGE MATERIAL DISTRIBUTION

Tr.	Rhyolite		Chert		Quartzite		Igneous		Grants		Jemez Obsidian		Other Obsidian		Unknown Obsidian		Petrified Wood		Limestone		Total	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
1	37	77.0	5	10.4	1	2.1	0	0	3	6.2	1	2.1	1	2.1	0	0	0	0	0	0	48	3.4
2	153	73.6	21	10.1	5	2.4	7	3.4	8	3.8	4	1.9	9	4.3	0	0	1	0.5	0	0	208	14.8
3	77	82.8	8	8.6	3	3.2	0	0	4	4.3	0	0	0	0	0	0	0	0	1	1.0	93	6.6
4	30	71.4	6	14.3	0	0	2	4.8	2	4.8	2	4.8	0	0	0	0	0	0	0	0	42	3.0
5	37	84.0	4	9.0	3	6.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44	3.1
6	19	76.0	3	12.0	0	0	0	0	1	4.0	1	4.0	1	4.0	0	0	0	0	0	0	25	1.8
7	98	85.2	7	6.1	3	2.6	1	.9	4	3.5	0	0	1	.9	1	.9	0	0	0	0	115	8.2
8	181	64.6	23	8.2	14	5.0	8	2.9	27	9.6	8	2.9	8	2.9	8	2.9	1	.4	2	.7	280	20.0
8a	30	68.0	4	9.1	3	6.8	3	6.8	2	4.5	0	0	1	2.3	1	2.3	0	0	0	0	44	3.1
9	101	63.6	19	11.9	14	8.8	14	8.8	5	3.1	2	1.3	1	.6	3	1.9	0	0	0	0	159	11.3
10	214	68.0	27	8.6	19	6.1	18	5.7	26	8.3	2	.6	0	0	2	.6	2	.6	4	1.3	314	22.4
11	12	75.0	1	6.2	1	6.2	0	0	2	12.5	0	0	0	0	0	0	0	0	0	0	16	1.1
13	1	100.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
14	3	60.0	1	20.0	0	0	0	0	0	0	0	0	1	20.0	0	0	0	0	0	0	5	0.3
16	2	100.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0.1
17	0	0.0	1	100.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0.1
18	1	16.7	1	16.7	1	16.7	1	16.7	0	0	0	0	2	33.3	0	0	0	0	0	0	6	0.4
TOT	996	71.0	131	9.3	67	4.8	54	3.8	84	6.0	20	1.4	25	1.8	15	1.1	4	0.3	7	.5	1403	99.8

Table 7-2

SIZE AND MATERIAL DISTRIBUTIONS OF POOL GROUPINGS

POOL GROUPING	RHYOLITE				CHERT				GRANTS OBSIDIAN				QUARTZITE				OTHER IGNEOUS				SUMMARY			
	Big	Med	Sm	Total	Big	Med	Sm	Total	Big	Med	Sm	Total	Big	Med	Sm	Total	Big	Med	Sm	Total	Big	Med	Sm	Total
Slump	172	144	91	407	4	24	16	44	0	11	32	43	10	12	8	30	12	12	2	26	198	203	149	550
	42.3%	35.4%	22.4%	74.0%	9.1%	54.5%	36.4%	8.0%	0.0%	25.6%	74.4%	7.8%	33.3%	40.0%	26.7%	5.5%	46.2%	46.2%	7.7%	4.7%	36.0%	36.9%	27.1%	
Slump and Midden	45	49	29	123	4	14	4	22	0	6	8	14	1	5	3	9	3	3	0	6	53	77	44	174
	36.6%	39.8%	23.6%	70.7%	18.2%	63.6%	18.2%	12.6%	0.0%	42.9%	57.1%	8.0%	11.1%	55.6%	33.3%	5.2%	50.0%	50.0%	0.0%	3.4%	30.5%	44.3%	25.3%	
Use and occupation surfaces	14	17	6	37	2	4	1	7	0	1	1	2	0	1	0	1	1	0	0	1	17	23	8	48
	37.8%	45.9%	16.2%	77.1%	28.6%	57.1%	14.3%	14.6%	0.0%	50.0%	50.0%	4.2%	0.0%	100.0%	0.0%	2.1%	100.0%	0.0%	0.0%	2.1%	35.4%	47.9%	16.7%	
Upper Midden	32	33	13	78	3	8	6	17	0	3	6	9	1	2	4	7	6	1	1	8	42	47	30	119
	41.0%	42.3%	16.7%	65.5%	17.6%	47.1%	35.3%	14.3%	0.0%	33.3%	66.7%	7.6%	14.3%	28.6%	57.1%	5.9%	75.0%	12.5%	12.5%	6.7%	35.3%	39.5%	25.2%	
Mid Midden	32	29	12	73	2	3	3	8	0	0	3	3	1	1	1	3	1	3	0	4	36	36	19	91
	43.8%	39.7%	16.4%	80.2%	25.0%	37.5%	37.5%	8.8%	0.0%	0.0%	100.0%	3.3%	33.3%	33.3%	33.3%	3.3%	25.0%	75.0%	0.0%	4.4%	39.6%	39.6%	20.9%	
Lower Midden	14	12	15	41	2	4	4	10	0	0	0	0	1	3	1	5	0	0	0	0	17	19	20	56
	34.1%	29.3%	36.6%	73.2%	20.0%	40.0%	40.0%	17.9%	0.0%	0.0%	0.0%	0.0%	20.0%	60.0%	20.0%	8.9%	0.0%	0.0%	0.0%	0.0%	30.4%	33.9%	35.7%	
Roomfill	15	14	11	40	0	1	3	4	0	1	1	2	1	0	0	1	0	1	1	2	16	17	16	49
	37.5%	35.0%	27.5%	81.6%	0.0%	25.0%	75.0%	8.2%	0.0%	50.0%	50.0%	4.1%	100.0%	0.0%	0.0%	2.0%	0.0%	50.0%	50.0%	4.1%	32.7%	34.7%	32.7%	
Floor	5	9	4	18	2	2	1	5	0	0	2	2	0	0	0	0	1	0	0	1	8	11	7	26
	27.8%	50.0%	22.2%	69.2%	40.0%	40.0%	20.0%	19.2%	0.0%	0.0%	100.0%	7.7%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%	3.8%	30.8%	42.3%	26.9%	
Subfloor	36	20	24	80	0	1	1	2	0	2	2	4	1	2	1	4	1	0	1	2	38	25	29	92
	45.0%	25.0%	30.0%	87.0%	0.0%	50.0%	50.0%	2.2%	0.0%	50.0%	50.0%	4.3%	25.0%	50.0%	25.0%	4.3%	50.0%	0.0%	50.0%	2.2%	41.3%	27.2%	31.5%	
All Middens	123	123	69	315	10	29	17	56	0	9	17	26	4	11	9	24	10	7	2	19	147	179	114	440
	39.0%	39.0%	21.9%	71.6%	17.9%	51.8%	30.4%	12.7%	0.0%	34.6%	65.4%	5.9%	16.7%	45.8%	37.5%	5.5%	52.6%	36.8%	10.5%	4.3%	33.4%	40.7%	25.9%	
Roomfill and below	59	49	45	153	3	5	6	14	0	3	5	8	2	4	1	7	2	1	1	4	66	62	58	186
	38.6%	32.0%	29.4%	82.3%	21.4%	35.7%	42.9%	7.5%	0.0%	37.5%	62.5%	4.3%	28.6%	57.1%	14.3%	3.8%	50.0%	25.0%	25.0%	2.2%	35.5%	33.3%	31.2%	

This data base was then utilized to run Pearson correlations and principal components analysis with varimax rotation. Actual counts for each of the 18 lithic size/material categories were examined by calculating their Pearson correlation coefficients (Table 7-3). Examination of these coefficients revealed that pronounced variation in co-occurrence between the size and completeness of materials were present. Several high correlations were present with the highest being: 1) between medium incomplete Cherts and medium complete Rhyolites; 2) small incomplete Grants Ridge Obsidians and Big Complete Rhyolites; 3) small incomplete Grants Ridge Obsidians and medium incomplete Rhyolites; and 4) big incomplete Rhyolites with big complete Rhyolites. As there are numerous fairly high co-occurrence correlations present their significance cannot be assessed. The correlations of big Rhyolites with the other four classes of rhyolites is fairly interesting. One possibility for this relationship may be that a wide range of sizes with varying degrees of completeness are generally produced during wall shaping and/or from impacts during subsequent collapsing. Another contributing factor may be that large Rhyolite/Welded Tuff nodules were frequently reduced at the site.

A principal components analysis with variance maximizing orthogonal rotation was also carried out on this lithic correlation matrix (Table 7-4). The component solution which successfully loaded all 28 debitage classes, resulted in four potentially meaningful factors, which accounted for approximately 75% of the variance computed to be present in the original correlation matrix. These factors were sufficiently complex or based on such a small percentage of the sample as to be beyond the authors current degree of understanding, thus very few suppositions are offered. The results of this and the above analysis are presented as food-for-thought with all explanatory suggestions being welcomed.

Factor 1 loaded very heavily on medium complete Rhyolite and big complete Other, and loaded strongly on big complete and incomplete Rhyolites, medium complete Rhyolites, medium incomplete cherts, medium and small incomplete Grants Ridge Obsidians, medium complete quartzites, and large incomplete Other. Again the apparent association of big and medium Rhyolites may to some degree be a function of wall construction and primary lithic reduction.

Factor 2 loaded heavily on small complete cherts and small complete Grants Obsidians, and significantly on small complete and incomplete Rhyolites, medium complete Cherts, large complete and small incomplete Quartzites, and medium complete Other. One explanation for the association of small and medium complete cherts, small complete Obsidians and small complete and incomplete Rhyolites, is that late stages of reduction generally associated with formal tool manufacturing, were conducted in similar locales regardless of the material utilized.

Factor 3 loaded significantly on medium complete Other and big incomplete Quartzites, and weakly on several categories. It also loaded somewhat weakly on the absence of small complete Quartzites and Other. The medium complete Other accounts for 0.7% and big incomplete Quartzites for 1.1% of the total data base.

Table 7-3
PEARSON CORRELATIONS BETWEEN LITHIC MATERIALS, COMPARED BY SIZE AND COMPLETENESS

	VRHY 1	VRHY 2	VRHY 3	VRHY 4	VRHY 5	VRHY 6	VCHE 1	VCHE 2	VCHE 3	VCHE 4	VCHE 5	VCHE 6	VGRA 3	VGRA 4	VGRA 5	VGRA 6	VQUA 1	VQUA 2	VQUA 3	VQUA 4	VQUA 5	VQUA 6	VOTH 1	VOTH 2	VOTH 3	VOTH 4	VOTH 5	VOTH 6
VRHY1	1.000																											
VRHY2	0.899	1.000																										
VRHY3	0.881	0.814	1.000																									
VRHY4	0.877	0.882	0.797	1.000																								
VRHY5	0.794	0.790	0.665	0.811	1.000																							
VRHY6	0.796	0.870	0.686	0.784	0.804	1.000																						
VCHE1	0.329	0.287	0.224	0.327	0.364	0.091	1.000																					
VCHE2	0.099	0.150	-0.115	0.190	0.027	-0.012	0.236	1.000																				
VCHE3	0.443	0.389	0.427	0.487	0.482	0.463	0.229	-0.235	1.000																			
VCHE4	0.838	0.797	0.903	0.800	0.589	0.688	0.240	0.073	0.433	1.000																		
VCHE5	0.525	0.621	0.393	0.606	0.654	0.747	0.085	0.000	0.678	0.442	1.000																	
VCHE6	0.730	0.700	0.606	0.781	0.605	0.644	0.181	0.245	0.206	0.720	0.471	1.000																
VGRA3	0.396	0.423	0.545	0.325	0.149	0.276	-0.118	-0.200	0.042	0.432	0.058	0.245	1.000															
VGRA4	0.817	0.754	0.877	0.694	0.651	0.671	0.153	0.049	0.528	0.821	0.494	0.474	0.379	1.000														
VGRA5	0.539	0.609	0.486	0.619	0.683	0.814	-0.113	-0.137	0.592	0.501	0.884	0.477	0.177	0.541	1.000													
VGRA6	0.901	0.866	0.840	0.901	0.758	0.753	0.168	0.163	0.417	0.826	0.564	0.814	0.407	0.795	0.584	1.000												
VQUA1	0.327	0.424	0.341	0.430	0.567	0.514	0.516	0.050	0.524	0.416	0.577	0.204	-0.100	0.428	0.524	0.264	1.000											
VQUA2	0.538	0.642	0.571	0.649	0.553	0.686	-0.117	-0.038	0.204	0.500	0.537	0.536	0.290	0.455	0.617	0.659	0.178	1.000										
VQUA3	0.715	0.628	0.675	0.587	0.559	0.562	0.204	0.330	0.223	0.749	0.272	0.495	0.229	0.767	0.348	0.661	0.438	0.339	1.000									
VQUA4	0.387	0.519	0.575	0.456	0.230	0.467	0.319	-0.087	0.254	0.590	0.250	0.383	0.346	0.370	0.227	0.405	0.433	0.344	0.234	1.000								
VQUA5	0.689	0.610	0.700	0.517	0.674	0.652	0.277	-0.077	0.371	0.646	0.319	0.271	0.188	0.796	0.445	0.521	0.607	0.278	0.819	0.263	1.000							
VQUA6	0.490	0.522	0.240	0.602	0.596	0.590	0.337	0.314	0.527	0.368	0.825	0.481	-0.157	0.371	0.659	0.459	0.607	0.332	0.385	0.124	0.316	1.000						
VOTH1	0.720	0.676	0.856	0.654	0.353	0.482	0.071	0.000	0.141	0.815	0.139	0.588	0.624	0.675	0.194	0.743	0.000	0.605	0.567	0.555	0.424	0.017	1.000					
VOTH2	0.729	0.650	0.795	0.670	0.356	0.508	-0.029	0.112	0.383	0.810	0.334	0.562	0.519	0.780	0.326	0.766	0.110	0.463	0.693	0.423	0.478	0.249	0.853	1.000				
VOTH3	0.358	0.420	0.298	0.497	0.318	0.376	0.114	0.155	-0.065	0.283	0.224	0.474	0.077	0.142	0.281	0.441	-0.000	0.784	0.209	0.168	0.043	0.277	0.434	0.216	1.000			
VOTH4	0.569	0.621	0.622	0.675	0.732	0.732	0.101	-0.137	0.390	0.566	0.632	0.436	0.142	0.605	0.776	0.619	0.547	0.798	0.489	0.272	0.604	0.491	0.407	0.345	0.593	1.000		
VOTH5	0.115	0.119	-0.058	-0.205	0.013	0.241	-0.082	-0.139	-0.128	-0.074	-0.080	-0.170	-0.055	0.034	-0.078	-0.124	-0.069	-0.106	0.159	-0.120	0.337	-0.109	-0.067	-0.089	-0.107	-0.106	1.000	
VOTH6	0.150	0.280	-0.029	0.288	0.134	0.296	0.057	0.420	0.246	0.250	0.510	0.406	-0.110	0.067	0.325	0.198	0.359	0.196	0.316	0.120	0.012	0.635	0.027	0.300	0.171	0.115	-0.077	1.000

VRHY = RHYOLITE   VCHE = CHERT   VGRA = GRANT'S OBSIDIAN   VQUA = QUARTZITE   VOTH = OTHER

1 = BIG COMPLETE   2 = BIG INCOMPLETE   3 = MEDIUM COMPLETE   4 = MEDIUM INCOMPLETE
5 = SMALL COMPLETE   6 = SMALL INCOMPLETE

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Table 7-4

PRINCIPAL COMPONENTS ANALYSIS WITH VARIMAX ROTATION, ON CORRELATION MATRIX PRESENTED IN TABLE 7-3

ROTATED LOADINGS 1/

LITHICS	1	2	3	4
VRHY (1)	0.833	0.411	0.037	0.151
VRHY (2)	0.760	0.488	0.150	0.148
VRHY (3)	0.922	0.309	-0.037	-0.088
VRHY (4)	0.708	0.503	0.294	0.221
VRHY (5)	0.494	0.709	0.012	0.135
VRHY (6)	0.561	0.722	0.115	-0.002
VCHE (1)	0.181	0.125	-0.259	0.597
VCHE (2)	0.065	-0.200	0.300	0.788
VCHE (3)	0.193	0.687	-0.198	0.055
VCHE (4)	0.872	0.308	0.038	0.153
VCHE (5)	0.151	0.885	0.219	0.120
VCHE (6)	0.608	0.282	0.470	0.278
VGRA (3)	0.627	-0.115	0.067	-0.368
VGRA (4)	0.802	0.413	-0.179	0.052
VGRA (5)	0.235	0.885	0.206	-0.125
VGRA (6)	0.807	0.390	0.279	0.108
VQUA (1)	0.132	0.706	-0.303	0.391
VQUA (2)	0.472	0.470	0.595	-0.254
VQUA (3)	0.728	0.236	-0.142	0.364
VQUA (4)	0.535	0.154	0.006	0.042
VQUA (5)	0.620	0.466	-0.485	0.080
VQUA (6)	0.073	0.742	0.213	0.527
VOTH (1)	0.936	-0.060	0.221	-0.116
VOTH (2)	0.852	0.087	0.131	0.074
VOTH (3)	0.288	0.192	0.709	-0.028
VOTH (4)	0.406	0.736	0.217	-0.155
VOTH (5)	0.037	0.024	-0.428	-0.125
VOTH (6)	-0.014	0.320	0.361	0.589

VARIANCE EXPLAINED BY ROTATED COMPONENTS

1	2	3	4
9.451	6.644	2.424	2.423

PERCENT OF TOTAL VARIANCE EXPLAINED

1	2	3	4
33.752	23.728	8.657	8.653

1/ Abbreviations shown in Table 7-3.

Factor 4 loaded on large complete and incomplete Cherts and small incomplete Quartzites and Other. The large cherts account for 1.6 of the total data base and the small incomplete Quartzites and Other, 0.9% and 0.4% respectively.

7.2.2.2 Strata Descriptions

As development of this secondary lithic data base was the first attempt at defining meaningful stratigraphic groupings, these poolings were later refined. Although kept in more general groupings, the collections from excavation levels were regrouped into the revised stratigraphic poolings suggested by Bertram for the following discussion (see Table 5-1). As noted in Section 5.7, these stratigraphic distinctions were primarily based on observed natural stratigraphic units and on taxonomic differences in bone materials. During this poolset revision, the Other category was restricted to the basalt like materials (Other Igneous), as the few remaining entries into this category were limestones. The limestone could be separated out as they were consistently noted in the discussion portion of the rough sort form. Table 7-5 presents the results of the lithic materials by pooled stratigraphic groups. Based on Table 7-5, one interesting distribution was noted. Lithics associated with floor deposits in Trench 8 suggest that easily pressure-flaked materials were present, indicative of specialized lithic reduction activities.

7.2.3 Stage Two Analysis

Based on the limited number of high and low but potentially valuable deposits (Chambers Group, Inc., 1989), if was felt that the second more detailed sort would best be utilized to better characterize the Gallinas Springs lithic debitage. All lithics that were not easily discernable with the naked eye were examined microscopically at up to 30x. The intent of this second phase analysis was to complete a general description of the artifacts and to determine if the perceived expedient nature of the lithic reduction observed during the rough sort was indeed the case. This was attempted by coding the type of debitage, the flake portion (when applicable), and the type of platform (if present) on all items recovered from non-slump and/or post occupational strata except for Trenches 11-18, where 100% of the debitage was analyzed. The type of debitage was recorded to better characterize the stages of lithic reduction conducted at the site. The types of debitage were originally broken into seven categories: angular debris, decortication flakes, interior flakes, biface thinning flakes, blades, unknown (which generally meant that it was a flake fragment that could not be oriented), and rock (which was only recorded if it appeared to have been utilized and/or modified). The blade category was later dropped as the three or four pieces that fit the length versus width and cross section shape criteria for blades, lacked platforms. The absence of a platform did not allow a determination of whether these items were resultant from intentional core and blade reduction technique or other techniques.

Table 7-5

LITHIC MATERIAL TYPES BY POOL GROUPINGS

Pool Groupings	Flakes	RHYOLITE Total	RHYOLITE %	CHERT Total	CHERT %	GRANTS OBS Total	GRANTS OBS %	QUARTZITE Total	QUARTZITE %	OTHER IGNEOUS Total	OTHER IGNEOUS %	POOL TOTAL Total	POOL TOTAL %	PERCENT OF DATEBASE
Slump and Post Occupation - Trench 1.1, 2.1, 3.1, 4.1, 5.1, 7.1, 8.1, 9.1, 10.1	Complete	113	27.8	12	27.3	16	37.2	8	25.0	9	34.6	158	29.0	12.9
	Incomplete	294	72.2	32	72.7	27	62.8	24	75.0	17	65.4	394	71.0	32.0
	Total	407	73.7	44	7.9	43	7.7	32	5.7	26	4.7	552		44.9
Slump and Strats Mixed - 3.2, 4.2, 8A.2, 10.2	Complete	43	35.0	3	13.6	3	21.4	6	66.6	2	33.3	57	33.0	4.6
	Incomplete	80	65.0	19	86.4	11	78.6	3	33.3	4	66.7	117	67.0	9.5
	Total	123	70.6	22	12.6	14	8.0	9	5.2	6	3.4	174		14.1
Use and occupation surfaces 1.2, 1.3, 2.2	Complete	10	27.0	1	14.3	0	0	0	0	0	0	11	23.0	0.9
	Incomplete	27	73.0	6	85.7	2	100.0	1	100.0	1	100.0	37	77.0	3.0
	Total	37	77.1	7	14.5	2	4.2	1	2.0	1	2.0	48		3.9
Upper Midden 2.3, 9.2	Complete	19	24.4	4	23.5	1	11.1	1	14.3	2	25.0	27	23.0	2.2
	Incomplete	59	75.6	13	76.5	8	89.9	6	85.7	6	75.0	92	77.0	7.5
	Total	78	65.5	17	14.3	9	7.5	7	5.9	8	6.7	119		9.7
Mid Midden 2.4	Complete	21	28.8	1	12.5	0	0	0	0	3	7.5	25	27.5	2.0
	Incomplete	52	71.2	7	87.5	3	100.0	3	100.0	1	25.0	66	72.5	5.4
	Total	73	80.2	8	8.8	3	3.3	3	3.3	4	4.4	91		7.4
Lower Midden 2.5, 9.3	Complete	10	24.4	3	30.0	0	0	1	20.0	0	0	14	24.5	1.1
	Incomplete	31	75.6	7	70.0	0	0	4	80.0	1	100.0	43	75.5	3.5
	Total	41	72.0	10	17.5	0	0	5	8.7	1	1.8	57		4.6
Room Fill 8.2	Complete	8	20.0	0	0	2	100.0	0	0	0	0	10	24.5	0.8
	Incomplete	32	80.0	4	100.0	0	0	1	100.0	2	100.0	39	79.6	3.2
	Total	40	81.6	4	8.2	2	4.1	1	2.0	2	4.1	49		4.0

Table 7-5
(continued)

LITHIC MATERIAL TYPES BY POOL GROUPINGS

Pool Groupings	Flakes	RHYOLITE Total	RHYOLITE %	CHERT Total	CHERT %	GRANTS OBS Total	GRANTS OBS %	QUARTZITE Total	QUARTZITE %	OTHER IGNEOUS Total	OTHER IGNEOUS %	POOL TOTAL Total	POOL TOTAL %	PERCENT OF DATEBASE
Floor 8.3	Complete	4	22.2	0	0	0	0	0	0	0	0	4	15.0	0.3
	Incomplete	14	77.8	5	100.0	2	100.0	0	100.0	1	100.0	22	85.0	1.8
	Total	18	69.2	5	19.2	2	8.8	0	0	1	3.8	26		2.1
Subfloor 7.2, 8.4	Complete	18	22.5	0	0	1	25.0	3	75.0	1	50.0	23	25.0	1.9
	Incomplete	62	77.5	2	100.0	3	75.0	1	25.0	1	50.0	69	75.0	5.6
	Total	80	87.0	2	2.2	4	4.3	4	4.3	2	2.2	92		7.5
All Middens 2.3, 2.4, 2.5, 3.2, 4.2, 8A.2, 9.2, 9.3, 10.2	Complete	93	29.5	11	19.3	4	15.4	8	33.3	7	36.8	123	28.0	10.0
	Incomplete	222	70.5	46	80.7	22	84.6	16	66.7	12	63.2	318	72.0	25.9
	Total	315	71.4	57	13.0	26	5.9	24	5.4	19	4.3	441		35.9
Room fill and below 5.2, 8.2, 8.3, 7.2, 8.4	Complete	31	20.3	0	0	3	37.5	3	42.8	1	20.0	38	20.0	3.1
	Incomplete	122	79.7	14	100.0	5	62.5	4	57.1	4	80.0	149	80.0	12.1
	Total	153	81.8	14	7.5	8	4.3	7	3.7	5	2.7	187		15.2

Flake portions were not deemed to be particularly important for this particular limited analysis. As the artifacts had to be reviewed for the second phase, however, it was recorded as a descriptive vehicle to better describe the lithic assemblage. This attribute more formally characterizes the incomplete flakes, which could (with a reasonably large data base) have potential for indicating additional information concerning lithic utilization at Gallinas Springs. Some potential uses could be as an indicator of the overall material qualities and/or expertise of the local knappers, and potentially as an approximation for post abandonment breakage.

Flake portions utilized include: not applicable or unknown (i.e., angular debris), complete, proximal fragment, medial fragment, distal fragment, and lateral fragment. The original coding forms also infrequently contained two of the above codes separated by a slash. This meant that the lithic was a combination of the two portion types (i.e., distal/lateral).

Platforms were described as an indicator as to the degree of effort and subsequent control required and/or desired for local lithic reduction. It was felt that this would be an excellent gauge as to the expedient nature of the lithic reduction.

The platform categories included: not applicable, cortical, single facet, multifacet, combination of cortical and faceted, and pseudodihedral. There were so few cortical/faceted (8 - 5 Rhyolites, 2 Grants, 1 Other Obsidian) and pseudodihedral platforms (12 - 7 Rhyolites, 3 Quartzites, 1 Chert, and 1 Other Igneous) that they were lumped together into an "other" classification for tabulation.

The second sort was also geared toward examining the type of cortex present on the Obsidians, and to better describe any utilized and/or retouched lithics. Two coding columns were included for recording the angle of utilized and/or retouched edges. Estimates of whether an obsidian cortex was water worn or not (when discernable) as well as a description of the utilized portions of a lithics were included in a discussion column.

Material types were lumped into four categories for tabulation. The Rhyolitic Welded Tuffs remained one category. The Petrified Woods were combined with the Cherts (assuming that these materials would behave similarly when worked). All of the Obsidians were combined into one category. The Quartzites and Other Igneous were combined as they were also thought to behave somewhat similarly. The handful of Limestone were also included into this last category.

The non-slump debitage was dominated by early to mid stages of lithic reduction. Interior flakes were the most abundant, comprising 46.7% of the second sort data base with decortication flakes composing 30% of the sample (see Table 7-6). Biface thinning flakes which would indicate later to final stages of reduction, formed 5.5% of the sample, while biface fragments accounted for only 0.8% of the data base (this does not include distinguishable formal biface tools). The classification of 44 biface thinning flakes might be somewhat high. A number of obsidian flakes which had cortical platforms were included into this category. Normally they would not have been included into this category, however, since they did possess other biface thinning flake attributes and did appear to have been tertiary flakes they were included.

Table 7-6

DEBITAGE TYPE

	Angular Debris	Decortication Flake	Interior Flake	Biface Thinning Flake	Biface Fragment	Unknown	Rock	TOTAL	PERCENT WITHIN RHYOLITE	PERCENT OF TOTAL
Very Big Rhyolite	2	12	9	0	1	1	0	25	4.5%	3.2%
Big Rhyolite	25	80	102	1	0	5	1	214	38.4%	27.4%
Medium Rhyolite	28	53	108	3	0	5	0	197	35.3%	25.3%
Small Rhyolite	23	30	61	5	0	3	0	122	21.9%	15.6%
	78	175	280	9	1	14	1	558		71.5%
% within Rhyolite	14.0%	31.4%	50.2%	1.6%	0.2%	2.5%	0.2%	100.0%		
% of Total	10.0%	22.4%	35.9%	1.2%	0.1%	1.8%	0.1%			
Big Chert	2	4	6	1	0	1	0	14	20.0%	1.8%
Medium Chert	7	5	16	5	0	0	0	33	47.1%	4.2%
Small Chert	3	5	10	5	0	0	0	23	32.9%	2.9%
	12	14	32	11	0	1	0	70		9.0%
% within Chert	17.1%	20.0%	45.7%	15.7%	0.0%	1.4%	0.0%	100.0%		
% of Total	1.5%	1.8%	4.1%	1.4%	0.0%	0.1%	0.0%			
Big Obsidian	1	0	0	0	0	0	0	1	1.4%	0.1%
Medium Obsidian	4	5	7	3	1	0	0	20	28.2%	2.6%
Small Obsidian	6	15	7	17	4	1	0	50	70.4%	6.4%
	11	20	14	20	5	1	0	71		9.1%
% within Obsidian	15.5%	28.2%	19.7%	28.2%	7.0%	1.4%	0.0%	100.0%		
% of Total	1.4%	2.6%	1.8%	2.6%	0.6%	0.1%	0.0%			

Table 7-6
(continued)
DEBITAGE TYPE

	Angular Debris	Decortication Flake	Interior Flake	Biface Thinning Flake	Biface Fragment	Unknown	Rock	TOTAL	PERCENT WITHIN RHYOLITE	PERCENT OF TOTAL
Very Big Other	0	1	1	0	0	0	1	3	3.7%	0.4%
Big Other	1	9	4	0	0	2	1	17	21.0%	2.2%
Medium Other	4	11	19	1	0	1	0	36	44.4%	4.6%
Small Other	4	3	14	3	0	1	0	25	30.9%	3.2%
	9	24	38	4	0	4	2	81		10.4%
% within Other	11.1%	29.6%	46.9%	4.9%	0.0%	4.9%	2.5%	100.0%		
% of Total	1.2%	3.1%	4.9%	0.5%	0.0%	0.5%	0.3%			
TOTAL BY TYPE	110	233	364	44	6	20	3	780		
PERCENT OF TOTAL	14.1%	29.9%	46.7%	5.6%	0.8%	2.6%	0.4%	100.0%		

The Rhyolitic Welded Tuffs, Cherts and Quartzite/Other Igneous categories were all dominated by interior flakes, composing 50%, 46% and 47% of the lithic materials respectively. Angular debris represented 11% of the sample. Potentially corresponding to the reduction stages, many of the Rhyolites, which compose 71% of the second sort sample, were big or medium. Half of the Cherts (9% of sample) and Quartzite/Other Igneous (10.5%) lithics were medium or small in size (47% and 44% respectively).

The Rhyolitic Welded Tuff decortication flakes primarily had cortical platforms (62%) or single faceted (33%) platforms (see Table 7-7). The Rhyolite interior flakes and biface thinning flakes exhibiting platforms, however, were overwhelmingly single faceted (93% and 57% respectively). This large percentage was affected somewhat by the flake definitions utilized during analysis. Except for the six flakes with cortical platforms that otherwise appeared to be biface thinning flakes, all flakes with cortex, proximal or otherwise, primary and secondary, were placed in the decortication category. The cortical versus single facet platform categories may not be that significant for the true rhyolites, however, as, almost without exception, the cortical platforms were in the form of a flat plane(s). When there were more than one flat stepped surface per face, the flake striking point would primarily be located within one plane, thus would behave very similarly to a single faceted platform. These flat surfaces, which appeared to be natural interbedding fracture joint planes, were often very difficult to distinguish from the single faceted platforms.

Decortication flakes for both the Cherts and Quartzite/Other Igneous categories primarily exhibited cortical platforms (36% and 63%), or were single faceted (22% and 37% respectively). The interior flakes for both material type categories overwhelmingly possessed single faceted platforms (79% and 82% respectively). The Quartzite/Other Igneous biface thinning flakes were also predominately single faceted (75%), while the Cherts were more evenly split between single (57%) and multifaceted platforms (43%).

The Obsidians, which formed 9% of the second sort, were primarily small (70%) in size. Contributing to the overall smaller sizes of the Obsidian lithics were a comparatively higher percentage of biface thinning flakes. The Obsidians were much more evenly distributed between the three flake categories, with both decortication and biface thinning flakes forming 28% of the analyzed sample and interior flakes forming 20%. Of the Obsidian flakes with platforms, the decortication flakes primarily had cortical platforms (67%), the interior flakes single (43%) or multifaceted (43%) platforms and the biface thinning flakes were predominately cortical (45%) or single faceted (45%).

Thirty-five of the Obsidian lithics documented during the second phase of the analysis were noted as having cortex. Of these, 29 were described as water worn or non-water worn. The classification of non-water worn was based on the absence or very limited degree of apparent battering whereas the cortices described as water worn were highly battered thus suggestive of stream tumbling. Twenty-five of the cortices appeared to be non-water worn, suggesting that they were not collected from stream beds. The 25 non-water worn cortical obsidians, visually sourced as: 14 Grants Ridge, 4 Jemez Mountains, 5 Other Obsidians and 2 Unknown. Three of the four water worn obsidians were Jemez Mountain and one was Other.

Table 7-7

SECOND PHASE (SORT) FLAKE PLATFORM SUMMARY

Material Type	DECORTICATION FLAKES (with platforms) Cortical	Single Facet	Multi Facet	Other	TOTAL PLATFORMS	TOTAL Decort Flakes	INTERIOR FLAKES (with platforms) Cortical	Single Facet	Multi Facet	Other	TOTAL PLATFORMS	TOTAL Interior Flakes	BIFACE THINNING FLAKES (with platforms) Cortical	Single Facet	Multi Facet	Other	TOTAL PLATFORMS	TOTAL Biface Thinning Flakes
Rhyolite	85	45	2	5	137	175	0	182	9	5	196	280	1	4	0	2	7	9
Percent	62.04%	32.85%	1.46%	3.65%	78.29%	75.11%	0.00%	92.86%	4.59%	2.55%	70.00%	76.92%	14.29%	57.14%	0.00%	28.57%	77.78%	20.45%
Chert	6	2	0	1	9	14	0	15	4	0	19	32	0	4	3	0	7	11
Percent	66.67%	22.22%	0.00%	11.11%	64.29%	6.01%	0.00%	78.95%	21.05%	0.00%	59.38%	8.79%	0.00%	57.14%	42.86%	0.00%	63.64%	25.00%
Obsidian	8	2	0	2	12	20	0	3	3	1	7	14	5	5	1	0	11	20
Percent	66.67%	16.67%	0.00%	16.67%	60.00%	8.58%	0.00%	42.86%	42.86%	14.29%	50.00%	3.85%	45.45%	45.45%	9.09%	0.00%	55.00%	45.45%
Other	12	7	0	0	19	24	0	23	2	3	28	38	0	3	0	1	4	4
Percent	63.16%	36.84%	0.00%	0.00%	79.17%	10.30%	0.00%	82.14%	7.14%	10.71%	73.68%	10.44%	0.00%	75.00%	0.00%	25.00%	100.00%	9.09%
Totals	111	56	2	8	177	233	0	223	18	9	250	364	6	16	4	3	29	44
% of platforms	62.71%	31.64%	1.13%	4.52%			0.00%	89.20%	7.20%	3.60%			20.69%	55.17%	13.79%	10.34%		
% of Total	47.64%	24.03%	0.86%	3.43%	75.97%		0.00%	61.26%	4.95%	2.47%	68.68%		13.64%	36.36%	9.09%	6.82%	65.91%	

Another slight difference was noted in the flake configuration between the west side (1 through 7) versus the east side trenches (8 through 10). Trenches 1 through 7 are dominated by interior flakes (65%), whereas Trenches 8 through 10 have a much more even distribution of interior versus decortication flakes (51% and 43% respectively). And if Trenches 8a, 9 and 10 are viewed alone then decortication flakes constitute a slight majority of the trench flake population (49% versus 47%). Possibly corresponding to the apparent decrease in primary stage lithic reduction, the population percentage of biface thinning flakes increases slightly from the east to west sides trenches.

7.2.4 Cores and Hammerstone

Eight cores and four tested cobbles or planer slabs were recovered from the trench excavations (see Appendix F). Nine of these nodules were collected from east side Trenches 8, 9, and 10, with the remaining three collected from Trenches 2 and 7. As with the lithic debitage, the parent nodules were primarily rhyolites. Five cores and two tested nodules were rhyolitic; three (one core, two tested cobbles) were obsidian; and there was one core each of chert and basalt.

Most of the Rhyolites were tabular, appearing to be from a bedded planar deposit(s). All three of the Obsidian parent nodules were pebbles (less than 64 mm) in size. The Obsidians were all sourced as Grants Ridge. Cortex on all three nodules did not appear to be stream battered. One rhyolite and the chalcedony core were reduced down to the point where no other good flakes could be removed. The chalcedony core appears to have been heat treated.

Most of the cores were also similar to the majority of collected debitage in that they appeared to be expediently and simply reduced. The platforms were (with two exceptions), either cortical, or single faceted. The other two platforms were pseudodihedral, the striking edge situated between two single facets, or a facet and a cortical surface. The platforms were frequently adjacent to each other, other times parallel or both.

Two of the cores have scarred edges that appear to be resultant from use wear versus platform preparation. This assumption is based on the degree of continuous edge damage and lack of similar damage on other edges. Edges were observed microscopically at 10x and 30x. A utilized edge on the basalt core has is a series of slightly concave and straight sections. Approximately two-thirds of this edge appears to be fairly straight when viewed overall. The angle of the edge ranges from 80 to 90°. One of the rhyolite cores (FS #823) has a slightly convex edge that has several 3 to 10 mm sized flake scars. The edge has an angle of approximately 85°. Based on this angle, both core edges appear to have been used for scraping.

Four hammerstones were also collected during excavations: two were oval rhyolitic cobbles; one was a trapezoidal to oval basalt cobble; and the other was the end of a cylindrical schistose cobble. All four cobbles exhibited varying degrees of edge and/or facial battering.

7.2.5 Conclusions

As Keller's Western Michigan University M.A. Thesis (1975) is the only other study of the lithic assemblage present at Gallinas Springs, it is frequently referenced to provide as complete a characterization as possible. The major difference between this study and Keller's analysis of debitage recovered during the 1974 field school was that there were previously only two material types identified. The major reason for this difference appears to be that the rhyolitic tuffs recovered during the field school were thought to have been used only as wall stones as no tools of this material were found (Keller 1975:75). Contrary to this previous study the vast majority of lithic debitage recovered from this project were Rhyolitic/Welded Tuffs. With the abundant tuff and flows of rhyolite and latitic composition available throughout the Mogollon-Datil Volcanic Field (Hill Appendix E), it is not surprising that residents at Gallinas Springs reduced numerous Rhyolites by fairly simple and expedient methods. Stratigraphically, a slightly higher percentage of Rhyolites were noted from deposits containing masonry wall materials, suggesting that some of the culturally reduced materials were, as assumed by Keller, the by-product of wall construction. Another possibility is that fragments produced by falling wall, weathering and/or heat spalling from rock rubble may resemble intentionally reduced debris elevating the totals. However, a clear majority of Rhyolite lithics exhibited "classic" morphological attributes for flakes produced by controlled, early to mid stages, of chipped stone lithic reduction.

The cherts and obsidians collected in 1974 were fairly similar to those recovered during the 1987 CGI field session. Of the 475 pieces of lithic debitage documented by Keller 51.1% were cherts and 49.9% obsidian,.with 54.5% of the obsidians and 30.4 percent of the cherts containing some amount of cortex (1975:74). As inferred from the predominance of medium to small debitage sizes noted in this study, there is a distinct possibility that many if not most of the chert and obsidian debitage was detached from fairly small nodules. Keller also makes this assumption based on the high percent of cortex flakes relative to the proportion if initial trimming flakes. He also infers this for the obsidians as they were largely restricted to use in smaller projectile points (1975:75).

The predominance of Cherts and Obsidians measuring less than 2.5 centimeters in length also suggests that their knappable quality was generally superior to the majority of accessible Rhyolites for smaller and more controlled lithic reduction. It is also possible that these materials are available in limited enough numbers and/or from distant enough sources that it is advantageous to utilize as much of the procured material as possible. This potential scarcity and/or superiority of these items appears to be supported by the reasonably high percent of Cherts and Obsidian lithics exhibiting multipurpose and/or multi-edged utilization.

Keller notes that Obsidians were worked more economically than cherts as there are fewer unmodified tabular pieces and that cortex remnants occurred on 32.4% of all finished artifacts versus 16.2% for cherts. This would tend to be supported from this collection as there is a complete lack of large Obsidians, and that 45% of the obsidian biface thinning flakes and none of the cherts retain evidence of cortex.

Most of the Obsidians from this study are thought to have been brought or traded in from the quarry locations as only a very few contained battering suggestive of stream rolling. These Obsidians were apparently obtained from possibly as far away as southern Colorado and as close as Red Hill in southwestern New Mexico. Most of these Obsidians, however, visually appear to have been derived from the Grants Ridge source. Keller also predicts that the obsidians are from the Mount Taylor area, although, he bases this on a comparison of similar projectile point types.

The remainder of materials frequently reduced and utilized at Gallinas Springs Pueblo included a small percentage of Quartzites, and Other Igneous lithics. Even when combined, these materials appear to be the least well represented at the site. Despite this scarcity, they tend to have been employed almost as frequently for edge utilization as the Rhyolites, Cherts and Obsidians, suggesting that the potential grainier and more durable edge was also a frequently desired tool at Gallinas Springs Pueblo. These material types may not have been identified from the 1974 field session, as the Quartzites may have been included into the chert designation, and the basalt like igneous in with the rhyolitic tuffs.

The majority of flakes recovered were decortication and interior flakes which are indicative of early to mid stages of chipped stone reduction. Most of the platforms were single faceted or cortical which indicates limited preparation prior to flake removal, thus a reduction strategy which appears fairly expedient. The 1974 field school collection also appeared to be dominated by early to mid stages of reduction as 41% were decortication flakes, 21% interior flakes, and 1% thinning flakes. The remainder of the collection (37%) was composed of unidentifiable debris, i.e. small non-identifiable flakes and tabular fragments.

The above summary cannot be viewed as a full lithic assemblage characterization. Based on the size and depth of the pueblo, the recovered lithic sample surely represents an extremely small percent of the total chipped stone population. The location, size, and extent of the excavations required in this undertaking cannot result in a sample which would be representative of the overall lithic assemblage at Gallinas Springs Pueblo. It is hoped that the above description will be an aid in developing and refining future research designs, hypothesis, and interpretations regarding the relationship of Gallinas Springs to the ecosystem and population systems with which it is associated.

7.3 CHIPPED STONE TOOLS

7.3.1 Non-Formal Tools

Sixty-four of the 1403 (4.6%) pieces of lithic debitage either contained visible evidence of edge utilization, retouch, and/or wear (see Appendix F). Also included in the debitage collection were three apparent non-utilized obsidian biface fragments and a non-utilized rhyolite uniface or flake core. The "tools" (lithics exhibiting wear and/or retouch), were fairly well spread across the material type categories with 28% being Obsidian, 27% Rhyolite, 23% Chert, 20% Quartzite/Other Igneous, and one (1.6%) a Limestone. Of these, 24 (37.5% including two biface fragments) had utilized edge angles of less than 50 degrees suggesting

a cutting application (Vierra 1985:3), 23 (36%) had edge angles of over 50 degrees suggesting more of a scraper utilization (2 were classified as scraper/spokeshave?), and 1 (1.6%) had edge angle of 50 degrees. Thirteen (20%) of the lithics had at least one edge over and one under 50 degrees suggesting a multipurpose application. In addition to the above, two possible gravers and one spokeshave were tentatively identified.

Flakes were the predominant debitage category utilized except for lithics with edges greater than 50 degrees where almost half were either angular debris (35%) or utilized rocks (13%) (unifaces and bifaces were not given a flake versus angular debris classification). Most of the utilized Rhyolites were big (70%). The Cherts tended to be big (47%) or medium (40%) in size while the Quartzite/Other Igneous tools were primarily big (61.5%). A larger percentage of medium Obsidian category (72%) showed evidence of utilization than did the small category (28%). None of these tool size ranges take into account the completeness of a flake.

The small percent of Rhyolites exhibiting visible edge wear, may be more a function of the abundance of good rhyolites, and the ease of producing a usable edge, than a lack of material utilization. Due to the abundance of knappable rhyolites available for utilization, most pieces may not have been worked enough for wear to be visible to the naked eye. None of the Rhyolites nor Quartzite/Other Igneous were classified as multipurpose tools, in contrast to the Cherts and Obsidians. Conversely, the multi-use and/or multiple utilized edges of Cherts and obsidians may be indicative of the importance of these materials for cutting and scraping, and may also indicate a limited or distant availability. Forty percent of the Cherts and 39% of the Obsidians exhibited multiple variations in edge characteristics.

The majority of field school lithics exhibiting evidence of utilization were chert which formed 72% of the total sample. The fact that 24.4 percent of the chert and obsidian flakes recovered in 1974 were utilized and or modified versus 4.6% of all material types for this study may be more of a function of definition. As most debitage contained some degree of edge damage, it had to be fairly continuous over at least a portion of an edge, and distinctly more worn than similar companion edges to be classified as utilized for this study. Another factor which could also contribute to this interesting difference is that the excavations were conduction in different activity areas where different tools and percentages of tools were utilized. The midden excavated by Western Michigan University contained 45.1% of the utilized and modified debris, while excavated rooms contained an average of 4.5%.

7.3.2 Formal Tools by Jack Bertram

7.3.2.1 Bifaces and Projectile Points

Of the bifaces recovered from LA 1178 in the FS/CGI 1987 mitigation, a total of 23 items had been worked to the point that they could be classified as formal tools. These included two drills, three dart-knife or very large arrow points, a dart preform, a very large dart preform, 11 arrow points, and five biface fragments (see Figure 7-1 and Table 7-8). Materials represented in this collection included Grants obsidian and transparent obsidian (examples of which resemble both Jemez and Red Hill types), clear chalcedony, clear chalcedony with blue inclusions, tan-to-cream chalcedonic chert or silicified tuff, chalcedonic silicified wood, red jasper, and grainy gray chert or fine silicified sandstone. One example, the large biface found in or with a crushed pot (FS 1606), had been badly burned and crazed to the point that the material type could not be confidently determined. It appears to have been made on the tan-to-cream chalcedonic chert or silicified tuff that burned to a variable white to dull gray color.

The arrow points in this collection exemplify a remarkable range of manufacturing skill and effort. Two examples, FS 381 and FS 1150, are among the best-executed pieces of stonework this author has ever seen outside of Paleoindian assemblages. At the other extreme, FS 399 and FS 113a (not illustrated, but similar to and even cruder than FS 399) are minimally retouched flakes. All but two of the reconstructible arrow points are unnotched simple triangles; the exceptions are FS 425, a basally-notched Garza point, and FS 709, a side-notched Reed or PIII style. This last piece is arguably not notched at all; the notches are less than 0.5 mm deep. Of the 11 definite arrow points, one is jasper, two are gray chert, one is chalcedony, two are chalcedonic chert/silicified tuff, and five are obsidian. Reconstructed lengths for these items range from 14 to 26 mm. The complete or confidently reconstructible items are 18, 20, 21, and 26 mm in length. Base width ranges from 7.5 to 12 mm. Effective haft widths were probably all in the 6 to 10 mm range.

Larger points are all typologically consistent with the range of corner-notched forms usually called Lobo, BMII, or En Medio in this region. The three hafted examples (FS 743, FS 343, FS 254) have minimum haft widths of 10, 13, and 13 mm, respectively. FS 743 is deeply serrated and intact. The other two examples appear (on 20x and 40x examination) to have been resharpened in-haft perhaps for use as oblique knives. The resharpened areas appear neither fresher nor more eroded than do the haft areas, implying that these examples may be products of the residents of LA 1178, rather than older items collected and recycled by the Gallinas Springs Mogosazi. All three were found in secure PIII/PIV cultural context and two were in probable association with room floors.

Two unnotched dart/knife points or preforms were also found. One (FS 1158) is a minimally but skillfully retouched flake resembling the Antelope Creek "Guitar Pick Preform" type, while the other (FS 1606) is a large, thin, skillfully-made biface which would not be out of place in a Paleoindian or Early Archaic assemblage. In fact, this latter object appears to have been fluted or thinned from the base along one face. One lateral edge of this piece is heavily ground and worn; the other edge displays wear but may lack grinding. Microscopic

FIGURE 7-1

SELECTED FORMAL TOOLS

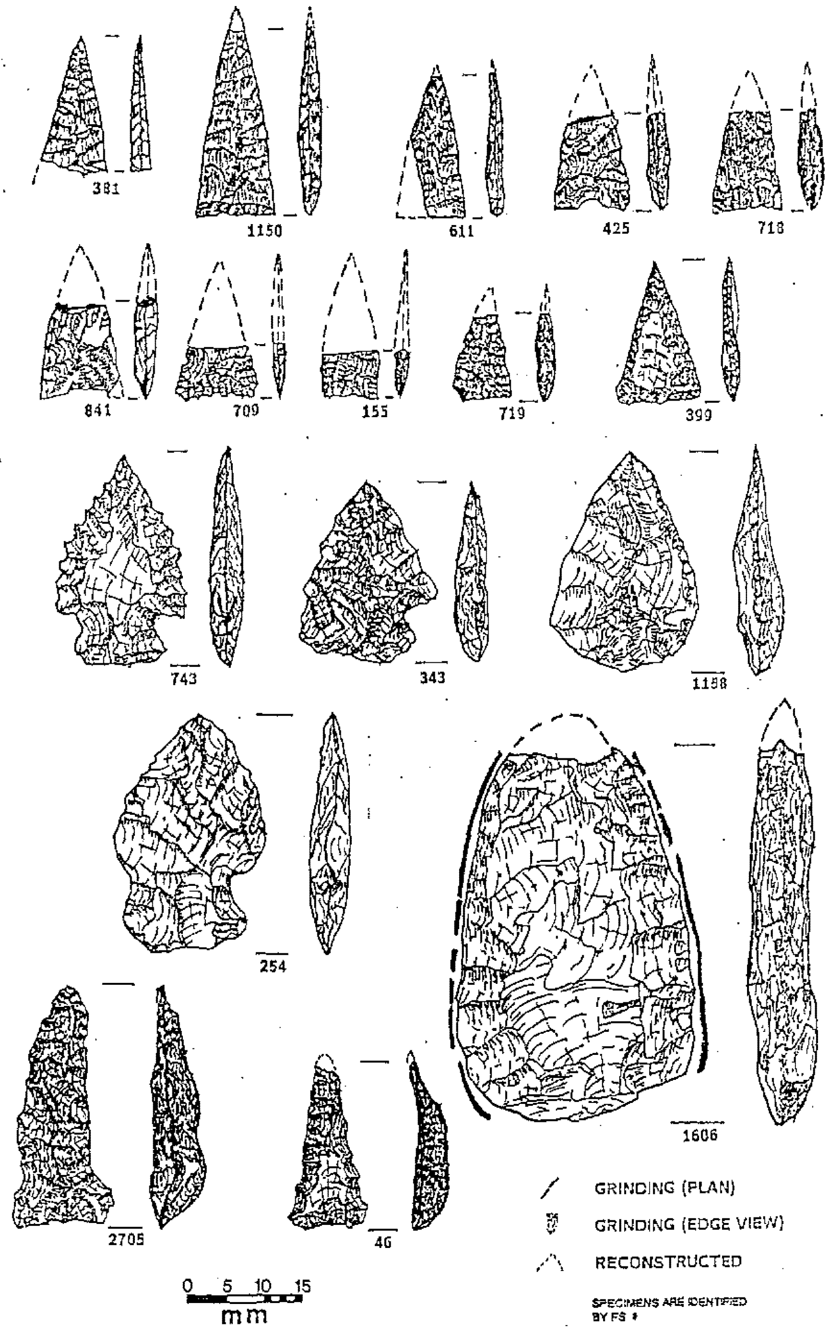


Table 7-8

LA 1178 POINTS AND BIFACES

FS No.	Trench	Unit	Level	Context	Material	Type and Comments	Illustrated in Figure 7-1
1150	2	1	9	Middle rich midden	gray chert	Unnotched arrow point with extremely fine work	yes
381	9	3	7	Midden zone 3	Jasper	arrow point with extremely fine work	yes
155	4	2	8	Strata 3 and 4	Grants obsidian	unnotched arrow point, fine work, small	yes
113a	4	2	4	Slump and Stratum 2	tan chalcedony/chert	unnotched arrow point, made on a flake, rough	no
611	7	1	4-6	Slump	gray chert	unnotched arrow point, made on a flake	yes
709	8	2	1	Slump	Jemez? obsidian	side-notched arrow point, well-made, notches minimal	yes
718	8	2	2	Slump	Grants obsidian	unnotched arrow point, well-made	yes
719	8	2	2	Slump	clear chalcedony	unnotched arrow point, well made, very small	yes
399	9	3	10	Lowest midden	tan chalcedony/chert	unnotched arrow point, made on a flake	yes
841	10	2	6	Slump	opaque obsidian	unnotched arrow point, well-made	yes
425	11	2	5	Arroyo fill	Grants obsidian	basal-notched arrow point (Garza?)	yes
1158	2	1	11	Middle rich midden	clear chalcedony	dart point/preform, almost unifacial	yes
1606	3	2	11	Lower midden, in pot	chert? silicified tuff?	dart-knife/preform, large, badly burned	yes
254	5	2	12	Floor association?	silicified wood	dart point, resharpened in haft?	yes
743	8	1	7	Floor association?	clear chalcedony, blue inclusions	serrated dart point, complete, Lobo/En Medio style	yes
343	9	3	5	Upper midden	chalcedony/silicified wood	dart point, resharpened in haft?	yes

Table 7-8
(continued)
LA 1178 POINTS AND BIFACES

FS No.	Trench	Unit	Level	Context	Material	Type and Comments	Illustrated in Figure 7-1
46	3	1	3	Slump	Grants obsidian	drill/point, section strongly plano-convex	yes
2705	8	2	7?	in wall?	Grants obsidian	drill/point, section strongly plano-convex	yes
713	8	1	1	Slump	Jemez/Red Hill? obsidian	drill?, tip fragment, strongly plano-convex	no
113b	4	2	4	Slump + Strat 2	Grants obsidian	biface fragment, cortex and flaws present	no
721	8	2	2	Slump	Grants obsidian	biface fragment, broken on flaw?	no
362	9	3	6	Upper midden	Jemez? obsidian	biface tip, broken in production?	no
406	11	1	6	Arroyo fill	Grants obsidian	biface tip/ear, snap fracture?	no

examination at 40x revealed evidence on the edges of grinding (perhaps for platform preparation), striations and polish along the blade axis, and also striations and scalar damage perpendicular to the blade edge. This item was the only LA 1178 biface found to exhibit definite microscopic wear marks. It was found in or adjacent to a reconstructible Magdalena Shoulder-Banded Patterned Corrugated utility jar and was also associated with an elk or bison manubrium.

One fragmentary and two complete items (FS 46, FS 713, FS 2705) were formally more consistent with drills than with projectile points. All are long and slender. All have been worked bifacially to a lunate longitudinal section and a pronounced plano-convex cross-section. None bore definite microscopic wear evidence.

Of the four fragments of obsidian bifaces (FS 1136, FS 362, FS 406, FS 721), three appear to be fragments which failed in production. The fourth (FS 406) may have been a drill tip or a large point's barb; it seems to have broken in use or from shock resulting from work on another portion of the item.

A disproportionate fraction of arrow points, darts/knives, drills, and fragments were found in the east-central excavation area. Within this area, Trench 8 produced almost one-third of the entire formal biface sample (7 or 23 items: 3 arrow, 1 dart, 2 drills, 1 other). The adjacent Trench 8A produced no bifaces, but Trench 9 produced four. Dart and arrow points were found together in loose association in Trenches 2, 8, and 9.

The range of projectile points and bifaces recovered in the 1974 (E. Green) field school appears to replicate the CGI collection almost exactly (Keller 1975:55-60, Figures 29-31). The dominant unnotched arrow point type is also reported to be the most common type in the Cebolleta Mesa area (Dittert 1959:555). Keller found different proportions of obsidian use in arrow points, dart points, and drills (73%, 42%, and 12%) than did the FS/CGI effort (50%, 0%, and 100%, respectively).

At Qualacú, a contemporary and ancestral Piro town located 75 km south-southeast of Gallinas Springs, Elyea (1987:86-87) reported 12 arrow point preforms (i.e., unnotched), 13 side-notched arrow points, one corner-notched arrow point, three Jay style dart points, and two terminal Archaic corner-notched points. Elyea's arrow point preforms may be unnotched but truly finished arrow points, as certainly are at least some of the Gallinas Springs examples. Several of her side-notched points are only minimally notched, as is FS 709 from this sample. One of her two terminal Archaic points is deeply serrated and appears almost identical to FS 743 and to Keller's serrated dart points. Jay points differ little from FS 1606. Elyea's second terminal Archaic point evidently differs from FS 343 and FS 254 only in that it was never heavily resharpened and in that its base is straight, rather than moderately convex.

Elyea (1987:87) interprets four of her five large points as evidence of "scavenging at Archaic sites by the inhabitants of Qualacú". The fifth, found in the lowest Piro midden level, is interpreted by Elyea as suggesting "mixing of Archaic materials at this level".

Evidence from northern New Mexico (cf. especially Bertram 1987a; Bertram, et al. 1987; Lord, et al. 1987) and from the Tularosa and Hueco Bolsones to the southeast (R.S. MacNeish, personal communication, 1989) indicates that both the Anasazi and the Mogollon continued to produce as well as to scavenge large Jay and terminal Archaic points well into the middle Formative period. Elyea's interpretation of the presence of large points at Qualacú would therefore seem to be unfounded. The stylistic and proportional redundancy of large versus small and unnotched versus notched points at Qualacú and at Gallinas Springs may well imply rather that the late Mogosazi and their presumed Piro and Acoma immediate descendants employed a mixed technology incorporating a variety of types of cutting, thrusting, and piercing tools. Judging from the lack of differential patination and from the overall quality of work displayed in the FS/CGI bifaces, the residents of LA 1178 were probably capable of producing the full range of Archaic and Formative biface types.

7.4 GROUNDSTONE by Wayne Oakes

7.4.1 Introduction

Limited excavations at Gallinas Springs Pueblo resulted in the collection of 24 items which displayed evidence of intentional grinding. Provenience on these items is presented in Table 7-9, while Table 7-10 provides descriptive information on each item. Four main categories of groundstone were identified from the sample: metates, manos, polished pebbles, and abraders. The following discussion and accompanying tables provide information on each specimen recovered from the limited excavations.

Most of the rocks from this collection are sedimentary or extrusive igneous in origin (see Table 7-10). The sedimentary rocks are all sandstone and present no problem in terms of identification. The igneous rocks, however, do present identification problems. The definition of many extrusive igneous rocks is dependent on type and quantity of component essentials, assessories, and accidentals. The occurrence of accessory and accidental lithologies is dependent on the volcanic environment of origin; e.g., fragments of cold solid rock picked up by lava or ash flows from conduit walls (Jackson, 1970). The positive identification of these materials can often be made only by a geochemist or a petrologist studying thin sections. Materials recovered from the excavations include the following:

Quartz Porphyry

Quartz porphyry is considered a paleovolcanic form of rhyolite that is light gray to red in color with quartz and feldspar phenocrysts. It is derived from large flows and explosive units of fissure-type volcanoes.

Table 7-9

LA 1178 PROVENIENCE CLUSTERING
OF GROUNDSTONE BY TRENCH NUMBER

Trench	Unit	Level	FS#	Type
1	1	2A	904	Mano
1	3	1	938	Polished pebble
2	1	6	1133	Metate
2	1	12	1164	Mano
2	2	2A	1178-1	Mano
3	2	2	6	Metate
3	2	7A	31	Abrader?
5	2	3	207	Mano for palette?
6	2 (Feature 3.1)	9	539	Mano
6	2 (Feature 3)	10	529	Metate
6	2	16	586	Metate
7	2	6	624	Maul
7	3	4	339	Metate
8	1	1	714	Mano
8	1	5	735	Metate
8	2	1	708	Mano
8	2	9	783-1	Palette?
8	2	12	797	Abrader?
8A	2	1	1025	Mano
9	2	4	327	Mano
9	3	3	331-1	Mano
10	2	6	842	Polished pebble
10	2	7	853	Mano
10	2	9	859	Polished pebble

Table 7-10

GROUNDSTONE DESCRIPTION

FS #	Type	Fire Cracked?	Percent Complete	Size (mm) L x W x T	Material	Cross Section/ Shape	Comments
621	Polished fragment	Yes	Unknown	49 x 49 x 26	Quartz porphyry	Tabular	No grinding evidence; one polished surface
650	Non-ground	No	Unknown	52 x 38 x 12	Sandstone	Tabular	No evidence of grinding
6	Slab metate unifacial	Yes	Unknown	61 x 42 x 12	Sandstone	Tabular	Two fragments-on ground and one not
614	Polished fragment	Yes	Unknown	38 x 11 x 5	Quartz porphyry	Triangular	No evidence of grinding
31	Ground fragment unifacial	Yes	Unknown	35 x 19 x 8	Sandstone	Tabular	
845	Polished fragment, not ground	Yes	Unknown	35 x 22 x 6	Basalt	Convex; flat	No evidence of grinding
797	Abrader?	No	100%	47 x 27 x 14	Sandstone (coarse)	Triangular	
1041	Water worn cobble	Yes	Unknown	63 x 41 x 27	Quartzite	Multi-angular	No evidence of grinding
859	Polished pebble	No	Unknown	19 x 11 x 9	Chert	Rectangular	One surface ground
821	Slab metate	No	100%	325 x 250 x 120	Quartz porphyry to rhyolitic welded tuff	Rectangular	Lightly ground on one surface; possible expedient use of a building stone
904	Unifacial mano	Yes	30%	82 x 46 x 40	Granite porphyry (large quartz fragments)	Biconvex	Shaped by pecking; fine staining appears to be only one grinding direction; one handed
624	Hafted mano	No	100%	100 x 74 x 40	Basalt; dense, not vesicular	Flat and convex	Convex side is ground or shows use wear; flat site is ground to a fine polish

Table 7-10
(continued)
GROUNDSTONE DESCRIPTION

FS #	Type	Fire Cracked?	Percent Complete	Size (mm) L x W x T	Material	Cross Section/ Shape	Comments
339	Trough or basin metate	Yes	10%	155 x 95 x 70	Rhyolitic welded tuff; only slightly porphyritic	Concave and flat	Concave grinding surface; too fragmentary to tell if its a trough or basin shape
708	Unifacial mano	Yes	10%	120 x 75 x 30	Sandstone	Rectangular	Shaped; fire staining; possibly two handed
539	Unifacial mano	No	20%	75 x 59 x 31	Sandstone	Wedge	One-handed; battered end
1164	Bifacial mano	No	100%	105 x 93 x 36	Rhyolitic welded tuf; very porphyritic	Biconvex; irregular surface	One-handed; roughly disc shaped; irregular surface with small amount of surface area ground
1025	Unifacial mano	Yes	30%	114 x 63 x 20	Rhyolitic welded tuff; slightly porphyritic	Convex; irregular	Fire staining; appears to be heat spalled; may have been bifacial
714	Unifacial mano	Yes	20%	94 x 93 x 15	Sandstone	Flat; flat	Some fire staining; heat spalled? may have been bifacial; tabular
853	Bifacial mano	No	10%	69 x 65 x 25	Sandstone	Rectangular	Very slight angle of bevel on one surface; may indicate two-handed mano with back and forth grinding

Table 7-10
(continued)
GROUNDSTONE DESCRIPTION

FS #	Type	Fire Cracked?	Percent Complete	Size (mm) L x W x T	Material	Cross Section/ Shape	Comments
735	Bifacial metate	Yes	10%	137 x 114 x 30	Andesite with accessory quartz (large)	Concave and flat to rectangular	Both sides show evidence of pecking to roughen surface; may have been used as a mano after breakage; fire staining
586	Unifacial slab metate	No	25%	180 x 95 x 14	Sandstone	Rectangular; flat and flat	Tabular; pecking on one side to roughen grinding surface
529	Unifacial slab metate	No	30%	183 x 142 x 25	Sandstone	Rectangular	Tabular; pecking to roughen grinding surface; may have fit with FS 586 at one time
783-1	Palette? Bifacial	Yes	30%	100 x 67 x 14	Rhyolitic welded tuff, few phenocrysts	Rectangular	Tabular; original appeas to have been too small for use as a mano
331-1	Bifacial mano	No?	20%	77 x 62 x 22	Quartzitic sandstone, dense	Rectangular	Tabular; pecking to roughen grinding surfaces and to shape edge
1178-1	Unifacial mano	No	20%	70 x 62 x 20	Sandstone	Rectangular	Tabular; edge shaped by pecking; little use wear
842	Polished pebble	No	100%	31 x 27 x 20	Quartzite	Biconvex (ovoid)	Looked at under microscope and no sign of grinding observed; appears to be a waterworn pebble that may have been curated

Table 7-10
(continued)
GROUNDSTONE DESCRIPTION

FS #	Type	Fire Cracked?	Percent Complete	Size (mm) L x W x T	Material	Cross Section/ Shape	Comments
938	Polished pebble	No	100%	41 x 30 x 27	Quartzite	Biconvex (ovoid)	Looked at under microscope and no sign of grinding observed; appears to be a waterworn pebble that may have been curated
327	Unifacial mano	No	10%	54 x 37 x 14	Sandstone	Rectangular	Tabular; lightly ground on two high spots
1133	Metate	Yes	<5%	62 x 54 x 4	Ryholitic welded tuff, coarsely porphyritic	Sliver shaped; slightly concave	Slightly concave on ground surface; appears to be a heat spall
207	Mano for pallete	No	>90%	76 x 45 x 27	Unknown; tuff?	Rectangular	At least nine ground facets observed; possible palette mano for grinding minerals
54	Slab metate	No	20%	76 x 68 x 19	Quartzitic sandstone	Rectangular	Tabular; highly ground on one side and lightly ground on the other
18	Bifacial mano	Yes	50%	93 x 66 x 15	Qaurtzitic sandstone	Convex; flat	Fire staining; pecked on edges to shape

Granite Porphyry

This is a light gray to red igneous rock that is primarily made up of quartz and potassic feldspar and has a porphyritic texture.

Rhyolitic Welded Tuff

This tuff consists of widely variable fragments of cold solid rock that are set in a matrix of glass shards, pumice fragments, and fine dust. This material is usually light colored with a porphyritic texture.

Basalt

This is a dark colored igneous rock composed primarily of plagioclase and pyroxene. The texture can range from almost smooth to vesicular (approaching scoria).

Andesite

This is a blackish-brown or greenish igneous rock with a porphyritic texture. It often has large phenocrysts in a fine-grained groundmass.

Sandstone

This is a clastic sedimentary rock in which fragments that range from 1/16 to 2 mm compose more than half of the rock.

Quartzite

This is a metamorphoric rock that primarily consists of quartz.

7.4.2 Discussion

Some fragments of groundstone that have been tentatively classified as "metates" are too small to analyze function with certainty. Examples 586, 735, 1133, 54, and 783-1 all exhibit flat grinding surfaces but is possible that any one of them may have been used as a mano, abrader, polisher, or palette. It is also possible that some may have served a secondary grinding function after breakage. This supposition of secondary use is especially true of specimen 735; that specimen shows rounding of one edge on a side opposite the interior of a trough or basin.

Out of the nine specimens classified as having a metate function, four were sandstone, three rhyolitic welded tuff, one andesite, and one quartzite porphyry to rhyolitic welded tuff. The collection sample is too small to make definitive statements about material preference. However, it would seem a justifiable inference that the coarser porphyritic igneous rock would be used in a different stage of grinding (perhaps initial) than finer-grained sandstone. The one complete metate (821) is very coarsely porphyritic with numerous cavities. The wear on this specimen would indicate brief utilization and its size and shape may indicate expedient use of a building stone.

Twelve specimens were classified as manos with eight being sandstone, two of rhyolitic welded tuff, one of granite porphyry, and one unknown. Mano specimen 904 seems to have been utilized with a single grinding motion (as opposed to back-and-forth) as evidenced by one edge being rounded and the opposite edge being flat with an acute angle. There seems to be a preference for sandstone but this may be function of the small percentage of the site that was excavated. Mano specimen 207 exhibits at least nine ground facets with a reddish ochre-like material on parts of the surface. It is possible that this small groundstone was used to grind minerals on a palette.

Specimen 624 is a complete hafted maul that is ground to a fine polish on one side. The haft groove stops where the ground surface begins but is it unclear if it was ground before or after its manufacture as a maul. There is a slight upward curve along one edge of the long axis making it possible that it may have been a metate fragment that was turned into a maul after breakage.

Specimens 842 and 938 were initially classified as polished pebbles, but after microscopic examination (30X) it was determined that they were naturally worn pebbles of quartzite. There were no striae or any signs of use wear. However, it is probable that these pebbles were curated manuports collected for their beauty and/or unknown function.

7.4.3 Comparisons and Conclusions

Keller (1975), in his Master's Thesis on Gallinas Springs' stone artifacts recovered by the Green field school, mentions that all manos were of sandstone. The findings of this report supports Keller's data that sandstone may have been a preferred material for manos. Keller also described 13 complete and fragmentary metates of which nine were basalt and four were sandstone. The only basalt specimen identified from this more recent collection was that of the hafted maul (624). This would seem to indicate either two very different material type populations were sampled, or that the previously mentioned problem of identifying intergrading igneous lithologies caused Keller to "lump" all igneous rock under basalt.

Overall, the small sample size and fragmentary nature of the collection does not allow further definitive statements about Gallinas Springs Pueblo groundstone assemblage based on the present analysis. It does indicate that similar types of groundstone items were found both in this study and in the previous study by Keller (1975). The exact lithic material used for the manufacture of groundstone items, in particular the metates, may have differed. The

presence of limited amounts of both manos and metates within the confines of the limited expansion of excavation at the Pueblo is not surprising due to the nature of the deposits recovered. More extensive collections of groundstone items must be present in some of the midden areas of the site have not been explored in this project.

7.5 GLOSSARY OF TERMS

Angular debris: Angular debris are pieces of lithic material that are incidentally broken off during core reduction. These pieces of shatter lack definable flake characteristics such as a ventral surface, platform, or proximal/distal ends. The angular debris does, however, have conchoidal scars indicative of percussion manufacture (Chapman and Schutt 1977).

Biface Thinning Flake: Biface flakes are generally associated with the last stages of manufacture in formal tool production. Biface flakes are retouch flakes that have been detached from a bifacially retouched artifact (Vierra 1985). Retouching is a technique used to thin, straighten, sharpen, smooth and make the lithic artifact more regular in form (Crabtree 1972). "Retouch modification refers to the detachment of small pieces of debitage from a portion of the perimeter and extend over a portion of either surface of the artifact" (Chapman and Schutt 1977). A polythetic set of attributes for biface flakes include a multifaceted platform, a lipped platform, a platform angle of less than 50 degrees, dorsal flake scars parallel to each other and perpendicular to the platform, thickness of less than five millimeters which is relatively even from proximal to distal ends, a weak bulb of force, and a pronounced ventral curvature (Vierra 1985). Platform preparation on biface flakes is often difficult to identify as the platform is often crushed during flake removal. Biface thinning flakes are usually the by product of producing the final outline and cross section of a formal tool by bifacial shaping and thinning of unmodified secondary flakes (Heinsch, et al. 1985).

Bipolar Flakes: Bipolar flakes are pieces of lithic material that have been detached from a core through the use of a bipolar reduction technique, which involves placing the core on an anvil which may generate a negative bulb of percussion on one or both surfaces, or the presence of two positive bulbs of percussion on opposite surfaces or at opposite ends of the same surface. Bipolar debitage often exhibits crushing upon distal and/or proximal ends (Chapman and Schutt 1977). Oscillations resulting from the application of force may be observed radiating out from both the proximal and distal ends.

Blade: Blades are specialized flakes with parallel or subparallel lateral edges. The flake length is equal to or greater than twice the width. Cross sections may be plano-convex, triangular, sub-triangular, rectangular, or trapezoidal. Some blades have more than two dorsal crests or ridges. These flakes are usually associated with a prepared core and blade reduction technique, thus are not random flakes (Crabtree 1972).

Bulb of Force: The bulb of force is a semi-spherical bump located directly below the striking platform. The bulb is the largest oscillation resulting from the application of force to the striking platform. The bulb of force may be accompanied by ripples (lines of force) that

radiate outward from the bulb across the ventral surface. These ripples are produced when the shock waves travel through the material in successively smaller oscillations similar to water ripples (Heinsch, et al. 1985).

Core: A core is a lithic nodule (mass) that has a prepared platform from which to remove specific kinds of flakes. This lithic mass will have two or more negative scars at least two centimeters long which originate from one or more facets or surfaces of the material. The nodule will contain no bulbs of force (Chapman and Schutt 1977). A cobble with three or more cortical platform scars detached from two or more edges will be classified as a core despite the lack of a prepared platform. Three or more flake scars tend to indicate that the cobble was utilized for the removal of flakes rather than testing of the cobble. Detachment of flakes from two or more edges would indicate that the artifact is not strictly a cobble uniface.

Cortex With Facet(s): Platform containing some cortex and at least a flake scar or remnants of a scar.

Cortex: The natural outer surface or rind on a rock. Cortex is often a different color and texture than the underlying material composing the interior of the parent material and is produced as a function of weathering through time (Chapman and Schutt 1977).

Cortical: The striking platform is unprepared and situated on cortex.

Decortication Flake: A decortication flake for this analysis is a combination of primary and secondary flakes that retain evidence of being detached from a core during the initial stages of reduction. A polythetic set of attributes for core flakes include cortical, single, or multifaceted platforms; a platform angle of greater than 50 degrees; dorsal scars that may be absent, parallel, or perpendicular to the platform; a thickness of greater than five millimeters; a pronounced bulb of force; and an eraillure (Vierra 1985). "A polythetic group is - a group of entities such that each entity possesses a large number of the attributes of the group, each attribute is shared by large numbers of entities and no single attribute is both sufficient and necessary to the group membership" (Clarke 1968:37).

Distal End: This is the point or edge where the flake terminated. The end of the flake which is opposite from the proximal end.

Dorsal Surface: The outer surface of the flake. This surface is often recognized by the presence of cortex and/or previous flake removal scars.

Eraillure: An eraillure is a flake that sometimes comes off the bulb of force when the flake is removed from the original rock mass (core). Usually the flake has no platform but instead retains feathered terminations on both the proximal and distal ends. The dorsal side of the eraillure contains no compression rings while the ventral side has rings that match the scar left on the bulb of force (Crabtree 1972).

Flake: Refers to a freehand flake which is a piece of lithic material removed from a larger mass by the application of human force from one direction. The flake will exhibit definable characteristics such as a striking platform, ventral and dorsal surfaces, a bulb of force, an eraillure, lines of force, and proximal and distal ends (Vierra 1985). The minimum qualifiers for flake status are the presence of a platform or platform remnant and/or a bulb of force at one end, and the presence of a dorsal and ventral surface ... (Heinsch et. al. 1985).

Interior flake: An interior flake is a flake that is somewhat intermediate between a decortication flake and a biface flake. It contains some attributes of both decortication and biface flakes, thus cannot be classified into either category. An interior flake contains no cortex, and is generally smaller than a secondary flake. An interior flake appears to represent an intermediate stage in lithic reduction. This flake may have been removed from a thoroughly prepared core or possibly from an uniface.

Multifacet: Platform prepared by the removal of two or more flakes.

Platform: The area or surface receiving the force necessary to detach a flake or blade. The surface can be natural or prepared (Crabtree 1972).

Pressure Flaking: Process of forming and sharpening stone by removing surplus material (flakes) from the artifact by use of a pressing force. Pressure tools (i.e. bone, ivory, hardwood, horn, shell, etc.) used to apply force with accuracy and precision to the edge of the proposed artifact to detach controlled flakes (Crabtree 1972).

Primary flakes: Flakes that are removed during decortication of the lithic mass (core). A decortication flake is evidenced by cortex located on the dorsal surface or on the dorsal surface and platform.

Proximal End: The end of the flake containing the platform or platform remnant is termed the proximal end.

Pseudodihedral: Striking platform formed by the intersection of two faces.

Secondary flakes: Flakes that have been included into the decortication flake category as they are also evidence for early stage lithic reduction. A secondary flake is a core flake with cortex located on the platform only. Secondary flakes are usually smaller than primary but larger than biface flakes. A secondary flake will generally approximate the shape, size and cross section of the envisioned finished tool (Heinsch et al. 1985).

Single Facet: A platform prepared by the removal of one flake to create a scar which is then used as a striking platform.

Ventral surface: The face of the flake that separated from the interior of the original rock nodule (core) upon striking. The ventral surface is often recognized from a bulb of force, an eraillure and/or force ripples situated on the face.

Chapter 8

CERAMIC ANALYSIS

by A. R. Gomolak and T. L. Knight

8.1 INTRODUCTION

8.1.1 History

LA 1178 is a large masonry pueblo in the Gallinas Mountains north of the Plains of San Agustin and south of the Rio Salado. Despite long-term knowledge about the widespread presence of the carbon painted whiteware ceramics in west-central New Mexico (Danson 1957; Dittert 1959:404; Davis 1964; Frisbie 1971:35), writers continued to address them as a northern phenomenon. The obvious Rio Grande covariates and contemporaries, Santa Fe and Galisteo Black-on-whites, were accorded areal validity, while the carbon painted whitewares of LA 1178 (and LA 1180, LA 13422, and others) somehow managed to remain McElmo (or occasionally Mesa Verde or Galisteo). Round 1 began when Emma Lou Davis called the ceramics of LA 1178 "Mesa Verde Tradition, several times removed but still holding strong" (Davis n.d.:9). A. Helene Warren (1974) called for a "Southern Variety of McElmo Black-on-white" and debated this with Bill Sundt through 1974 and 1975 exchanges in *Pottery Southwest.* Ernestene Green (Sundt 1975) made a brief entry into Warren and Sundt's discussion by noting that "a local variety of McElmo Black-on-white" was recovered by Western Michigan University's excavations at LA 1178 (unfortunately we are not aware of any analyses or publications on the ceramics from the WMU excavation).

Dr. Joe Tainter led a University of New Mexico field school at LA 1178 in 1977. A. R. Gomolak, Terry L. Knight, and John Fountain (all at that time of NMSU) assisted Tainter in establishing the camp and systems for that field school. That was our first look at LA 1178 and the interesting ceramics of the surface assemblage. In 1979, Tainter arranged for Knight, assisted by Gomolak, to analyze the ceramics from the 1977 excavations. Knight's report (1981) on the analysis found few (327 of 8,876, 3.6%) "intrusive" sherds; and gave detailed, quantified, pottery descriptions of eight types and several varieties: Magdalena Whiteware, Magdalena Black-on-white; Magdalena Redware, Black-on-red, Polychrome and Incised; Magdalena Utility, Plain, and Incised; Magdalena Corrugated, Plain, Indented, Patterned, Punched; and Magdalena Smeared Corrugated.

The release of that report led to another exchange in *Pottery Southwest,* between Steve Lekson (1986) and Knight and Gomolak (1987) about the propriety of naming the Magdalena Wares. Lekson (1987) has subsequently used the Magdalena Black-on-white appellation, although with an "affinis" qualifier, to designate carbon painted whitewares found in Sierra County, New Mexico, within a hundred miles south of LA 1178. This was, essentially, the

end of Round 1. The bell for Round 2 was rung by the 1987 Chambers Group excavation at LA 1178, and the correspondence and research we have done in association with the analysis of that assemblage.

In addition to the Danson, Dittert, and Frisbie references mentioned above, Tom O'Laughlin has reported a "small but appreciable" percentage of 'affinis' Magdalena in the Firecracker Pueblo assemblage at El Paso, Texas. Occasional sherds of polished carbon painted whitewares are found across the Tularosa Basin (Eidenbach and Laumbach, personal communication, 1989), in the Capitan and Sacramento Mountains (Wiseman, personal communication, 1989; Kelley 1984), and along the Alamosa River in Catron and Sierra Counties (ARMS files, various).

Whether any of these wares are of 'type site centerline character' remains open to discussion. In reviewing the H.P. Mera collections from the Alamosa River sites (LA 1131, LA 1134), we find 'truly' Magdalena redwares and whitewares; and, we also find finer gray paste, high-fired carbon whitewares which undoubtedly agree with Lekson's 'affinis' Magdalena. These whitewares are, in fact, within the good end of the type description, and there are technically high quality Magdalena Whitewares in the LA 1178 assemblage, despite the central tendency to softer, browner pastes.

This poses no major problem if one considers that many of the soft brown paste whitewares at the type site are so fragile as not to be good traveling companions. If the carbon whitewares (e.g., LA 1131) further south are viewed as exports from the Gallinas Mountains communities, it is likely that 'only the strong survive' (or only the strong are of sufficient technical quality to become exports in the first place): thus, the harder, grayer examples are found further from the type site.

However, in light of the site plan, masonry, and other associated ceramics, it would appear far more likely that the carbon painted whitewares on the Alamosa and Placitas drainages are local production in the northern tradition. Depending upon the apparent dating class of the designs, one could argue that these sites represent the far south end of Kyini'ca and his Corn Clan's travels (Boas 1928; Ellis 1974), or that these southern sites are connected by trade to the Gallinas Mountains communities. We do not currently have sufficient data on the presence or absence of additional sites along the west side of the San Mateo Mountains to form a supportable conclusion.

The awareness of the southern carbon painted whitewares is growing, and the importance of Magdalena wares in helping define the circa A.D. 1300 populations of New Mexico is gaining wider acceptance. We would suggest that the recognition of these defined types representing large sites with large assemblages is a bit more useful than defining a southern variety of McElmo or than confusing the Galisteo definitions.

8.1.2 Present Study

During the spring of 1990, we conducted macro and microscopic analyses of the items recovered from the FS/CGI 1987 excavations at LA 1178. Eight thousand three hundred eighty six pieces were sorted, but fully 5,388 (64% by count) were 2 cm or less in maximum dimension, and considered too small to adequately address typological questions at any level beyond division into probable wares by temper/paste observation (see Table 8-1). Because the majority of the "too smalls" were utility wares, and many were tiny bits (< 1 cm), intense study was deemed an inappropriate use of scarce money better spent on the ware-type-variety definitions of larger sherds.

This size margin was occasionally pushed to include exotic or unique appearing sherds, representing types which would not otherwise be counted as present. This was useful to the point of having a broader basis for relative dating, but it made the identification of the smaller sherds less secure because of the lack of a large view of the paints and designs possibly present. However, the ware designation(s) for these sherds is relatively secure, as is the nominal chronology within approximately ±75 years; simply because the surfaces, paints, and designs of some wares changed dramatically between A.D. 1200 and 1350. The actual type label of a few sherds may well be off by "half a type" early or late, due to the inclusion of the smaller pieces, but this only affects 25 sherds (< 1% of the total analyzed).

Physical attributes were monitored on 3,028 sherds (Appendix G). In addition to provenience data, these categories comprise the database described in the discussions later in this section. These sherds were subjected to surface surveillance, then a fresh break was taken off each and the paste, temper, surfaces, and paints were examined microscopically at up to 40x. Magnification near 20x was most frequently adequate; but decisions on slip versus compaction/float, and observations of finer temper/paste combinations and of the saturation of carbon pigments often required higher settings.

Of the 3,028 analyzed sherds, 2,808 (92.7%) were decidedly in the Magdalena tradition as defined by Knight (1981). These included 618 Magdalena Whitewares, 47 Magdalena Redwares, 7 Magdalena Polychromes, and 2,137 Magdalena Utility wares. The 219 ceramics of other wares comprise 25 White Mountain Redwares, 28 Reserve-Tularosa-Cibola wares, 32 Rio Grande wares, and 134 southern Mogollon wares, constituting an assemblage 92.7% local and 7.3% exotic.

8.2 ANALYSIS ORIENTATION AND ATTRIBUTES

This analysis was rooted in the findings of our 1980 analysis of 8,872 sherds from the 1977 UNM excavations at LA 1178. In that analysis, a structured sample of 6,714 sherds was subjected to analysis of 18 attributes with over 100 possible attribute states. The result was the definition of a local ceramic tradition of Magdalena White, Red, and Utility wares, encompassing eight types and several varieties within those types. These Magdalena wares are an interesting amalgam of Mogollon and western-northern Anasazi traditions, which

Table 8-1

IDENTIFIED (≥ 2 cm) AND NONIDENTIFIED (< 2 cm) SHERD TOTALS

Trench No.	Poolset No.	Number > 2 cm	Number < 2 cm	Fraction Unidentified
01	91	6	17	0.7391
01	92	21	67	0.7614
01	93	18	41	0.6949
01	94	2	3	0.6000
02	111	8	7	0.4667
02	112	15	32	0.6809
02	113	76	73	0.4899
02	114	89	90	0.5028
02	119	100	175	0.6364
02	117	9	53	0.8548
02	115	49	150	0.7538
02	116	4	7	0.6364
03	1	83	156	0.6527
03	2	91	124	0.5767
03	3	102	127	0.5546
03	4	63	15	0.1923
04	11	92	93	0.5027
04	12	23	34	0.5965
04	13	33	46	0.5823
04	14	22	28	0.5600
05	21	29	17	0.3696
05	22	18	22	0.5500
05	23	18	13	0.4194
05	25	1	5	0.8333
06	51	31	16	0.3404
06	52	16	12	0.4286
06	53	5	8	0.6154
06	54	11	6	0.3529
06	55	12	13	0.5200

Table 8-1
(continued)
IDENTIFIED (≥ 2 cm) AND NONIDENTIFIED (< 2 cm) SHERD TOTALS

Trench No.	Poolset No.	Number > 2 cm	Number < 2 cm	Fraction Unidentified
06	56	15	7	0.3182
07	61	117	166	0.5866
07	62	4	5	0.5556
07	63	17	14	0.4516
07	64	88	70	0.4430
08	71	193	372	0.6584
08	72	35	67	0.6569
08	73	69	159	0.6974
08	74	59	129	0.6862
08	75	74	129	0.6355
08	76	51	231	0.8191
08	77	11	25	0.6944
08	78	12	29	0.7073
08A	101	181	183	0.5027
08A	102	33	51	0.6071
08A	103	11	10	0.4762
09	31	63	134	0.6802
09	32	56	59	0.5130
09	33	30	78	0.7222
09	34	35	51	0.5930
09	35	30	68	0.6939
09	36	43	71	0.6228
09	37	33	21	0.3889
09	38	9	18	0.6667
10	81	318	765	0.7064
10	82	270	417	0.6070
11	41	77	76	0.4967
Testpits 12-18	151	47	37	0.4405

were described and discussed at greater length by Knight (1981). The serious researcher should refer to that report for more details.

Because the intensity of the 1980 analysis defined attribute sets with which we became thoroughly acquainted and comfortable, this current analysis was not structured to extend the ad infinitum discussion of minutiae. Rather, we chose to concentrate on comparing and discussing the local versus exotic portions of the assemblage, in hope of providing information useful to field and lab workers in more consistently identifying Magdalena wares; in addition, we intended to provide the basic stratigraphic typological definitions necessary to discussion of the culture history of the site. Unfortunately, little chronological change could be confidently recognized.

Ten basic accounting categories were recorded for data processing. These are provenience and field specimen numbers; ceramic type; vessel type; sherd location; rim form; rim diameter; paint character, "1" on bowl interiors and jar exteriors, "2" on bowl and jar exteriors; worked sherd; and polished smudges. Four provenience variables and 48 attribute states of the eight physical categories were observed and recorded using a Fortran format. The category columns and attribute state descriptions and codes are given below. Absent or undeterminable states were always denoted by zero (0). The provenience (columns 7-20) and field specimen (columns 21-25) numbers were recorded as present on or in each bag of artifacts. The primary data handling sets were the field specimen numbers in groups determined by field stratigraphy, which allowed the depositional comparisons discussed in Chapter 6.

A <u>Ceramic Type</u> (columns 26-30) was assigned to each sherd based on combinations of attributes specified in the published type descriptions. This is basically a mental best-fit discriminant analysis that does allow for a range of discrepancies, but which results in a most-likely-case answer. Approximately 30 sherds were taken to the Laboratory of Anthropology for direct microscopic comparison to the type collections on file, to settle doubts about their origins. Actual type descriptions are given or referenced as appropriate later in this section. The types are identified in Table 8-2.

<u>Vessel Type</u> (columns 31-35) is also a mental best-fit process, using a subset of published descriptions, and based on the physical properties of each sherd. In whitewares and redwares a polished and decorated concave surface is a bowl interior; a polished and decorated convex surface opposite a less well finished surface is a jar exterior. Similarly, in plain utility wares, the concave or convex surfaces with the apparent highest energy investment in finishing technique(s) is the correlate of decoration for determining vessel type. Nonplain-surface utilities (corrugated, incised, textured, or appliqued) almost always have their energy intensive treatments on the exteriors of both jars and bowls; with the exception of polishes and smudges, which are generally found inside bowls and jars when present. The vessel types recorded by this analysis are shown in Table 8-3.

Table 8-2

CERAMIC TYPES RECORDED

MAGDALENA WARES	WHITE MOUNTAIN - CIBOLA	RIO GRANDE - RIO PUERCO
1. M. Black-on-white 2. M. Redware 3. M. Black-on-red 4. M. Polychrome 5. M. Whiteware 6. M. Plain Utility 7. M. Indented Corrugated 8. M. Plain Corrugated 9. M. Plain/Indented Corrugated 10. M. Finger Smeared 11. M. Punched Corrugated 29. M. Corrugated/Plain Body Junction 30. M. "Alma" 31. M. Indented Exterior/Black-on-white Interior 32. M. Patterned Indented Corrugated 39. M. Plain Incised 41. M. Plain Corrugated 45° Incised 42. M. Indented Corrugated Red Slip 43. M. Red Incised 44. M. Basketmark Utility	12. W.M. Redware 13. St. John's Polychrome 14. St. John's Black-on-red 15. Wingate Polychrome 16. Wingate Black-on-Red 22. Cibola Corrugated 37. Cibola Whiteware 47. Pinedale/Heshotauthla 48. Pinedale Polychrome 49. Zuni-Pinnawa?	17. Socorro Black-on-white 18. Chupadero Black-on-white 19. Casa Colorado Black-on-white 26. Los Lunas Smudged 28. Acoma Glaze A Polychrome 45. Elmendorf Black-on-white 46. Arenal Glaze-Polychrome 50. Pitoche Corrugated 51. Rio Grande Incised 52. Cebolleta? Black-on-white
NORTHERN MOGOLLON	**SOUTHERN MOGOLLON**	**UNDIFFERENTIATED**
20. Reserve Black-on-white 21. Tularosa Black-on-white 25. Reserve Indented Corrugated 33. Reserve Patterned Indented Corrugated 38. Reserve Punched Corrugated 40. "Mimbres" with Tularosa Paste	23. Jornada Bichrome 24. Jornada Plain 27. Playas Red Incised 34. El Paso Polychrome 36. El Paso Plain	35. Undifferentiated whiteware - not Magdalena

Although a reasonable effort was made to classify all sherds by vessel, utility ware sherds from undecorated portions of bowls and jars are at best difficult to separate. Some analysts use jar-body as a default category. However, due to the presence of Magdalena Plain and Corrugated bowls in the 1980 assemblage, an effort was made to avoid this tendency.

Sherd Location (columns 36-40) is also largely an experience-based observation (except for rims, see below) on the curvature and finish of both interior and exterior surfaces of the sherd (see Table 8-3).

Rim Form (columns 41-45) is a simple observation category that has large implications for assemblages within the 200 years subsequent to the LA 1178 assemblages analyzed to date. Compared to those later types, there is very little rim variation in the current and 1977 assemblages from LA 1178 (see Table 8-3).

Rim Diameter (columns 46-50) was recorded by matching rim sherd curvature to the concentric circles of polar coordinate graph paper. The raw data entries were in centimeters of radius, and were multiplied by two to estimate orifice diameters. Many rim sherds in the assemblage were large enough to type, but only 290 were large enough to match to a curve.

The Primary Paint (columns 51-55) category recorded bowl interiors and jar exteriors which are considered the primary fields of decoration on whitewares and redwares. The Secondary Paint (columns 56-60) category recorded the same attribute states on bowl and jar exteriors. No jars were observed with painted interiors.

The Worked Sherd category (columns 61-65) (see Table 8-3) was included in the expectation there would be various spindle whorls, sherd scrapers, 'gaming pieces', or sherds drilled for various reasons, in the assemblage.

Smudge-Polish (columns 66-72) (see Table 8-3) is the distinct result of adding soot from a smokey fire to the surface of a vessel, and compacting that soot onto and into the clay surface, to provide a far less permeable surface. This is not "use-soot" such as is commonly found on vessels set in or on a fire, but a high effort intentional surface treatment. As exemplified by Reserve and Los Lunas Smudged, and found in the Magdalena wares, this is a waxy, lustrous surface in the better examples. It retains a feel and smooth microscopic appearance that reinforces the visual observation of an intentional smudge. In the more haphazard examples, the qualifiers remain a smudged surface evincing streaks and patches of permanence achieved by polish. By comparison, use-soot does not appear compacted into the surface, nor waxy, and is generally fugitive (much will rub or wash off).

The last entries on the Fortran statement (columns 73-80) were reserved to note the initials of the individuals bagging the field collections, as a correlate to Field Specimen numbers in case individual field notes needed to be related to individual sherds or sets of sherds.

Table 8-3

DESCRIPTIONS OF CERAMIC VARIABLES

VESSEL TYPE NAME	CODE	DESCRIPTION
Unknown	0	undetermined, most often due to small sherd size or surface weathering
Bowl	1	considered open, oblate, approximately hemispherical vessels
Jar	2	oblate, approximately spherical vessels with narrower cylindrical necks, often "shouldered" where the upper vessel curves into neck
Miniatures	3	small vessels together with modelled and/or eccentric shapes
Seed Jars	4	oblate spherical vessels with a small circular orifice, e.g., a closed bowl or neckless jar
Ladle	5	dippers or scoops; generally a small (≤ 10 cm) bowl with a trough-like or tubular handle

Table 8-3
(continued)
DESCRIPTIONS OF CERAMIC VARIABLES

SHERD LOCATION	CODE	DESCRIPTION
Unknown	0	undetermined or eccentric
Rim	1	only those sherds with the actual lip of an orifice are classed as rims; various rim shapes are critical to some typological decisions
Neck/Shoulder	2	sherds from these areas generally have distinctive curves in three planes, rather than the two planes sufficient to describe a body sherd (concave-convex sherds)
Body	3	no distinctive characteristics which allow the other nominations; body sherds generally constitute the majority of excavation assemblages
Base	4	generally thicker than body sherds, occasionally taper in multiple directions, and are often less well finished than body or upper sherds; bases often evince the tight circular coiling that started the vessel
Handle	5	an addition to, or extrusion of, the body of a vessel, handle variations include flat straps; parallel, braided, twisted, or simple rolls of clay; trough or tubular forms; and occasional flared knobs
Lugs	6	a small curving "ear" of clay added to the exterior surface to aid handling, setting, or hanging of the vessel
Eccentrics	7	in this case only small modelled pieces; other than one small bowl-like item, these resemble effigy legs or tails roughly the size of a small pointed fingertip

Table 8-3
(continued)
DESCRIPTIONS OF CERAMIC VARIABLES

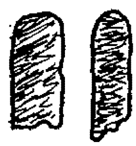
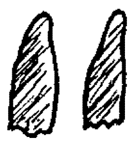
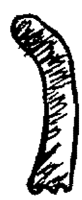
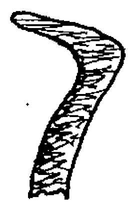
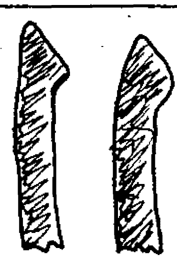
RIM FORM NAME	CODE	ILLUSTRATION	DESCRIPTION
Not Rim	0		absence of attribute
Direct	1	*  E I	a simple smoothing of the top coil of the vessel; finished the same as adjacent surfaces
Direct Thinned	2	 E I	a distinct tapering formed by laterally compressing the top coil(s) of the vessel; finished the same as adjacent surfaces
Everted	3	 E I	a mild outward flare of the lip of the rim, often well-smoothed, most common on utility wares (prior to the 'rim mania' of later glaze wares)
Inverted	4	 E I	a distinct narrowing of the vessel orifice by an inward curving lip; occurs on late White Mountain Redwares and Rio Grande Glazeware bowls
Fillet	5	 E I	Direct with Corrugations: generally a wider flattened coil of clay applied to provide the vessel rim; may appear slightly everted due to visual affect of corrugations immediately below

Table 8-3
(continued)
DESCRIPTIONS OF CERAMIC VARIABLES

RIM FORM NAME	CODE	ILLUSTRATION	DESCRIPTION
Direct-Inverted	6	 E I	Some vessels have a slight inward curve on the lip of an otherwise direct body-rim relation. Compare to 4 above and 9 below.
Flare	7	 E I	An extreme eversion only seen on utility vessels in this assemblage, the degree of the eversion is diagnostic in contemporary El Paso wares (and later Rio Grande Glazes)
Direct-Bevelled	8	 E I	Occurs occasionally in whiteware and redware bowls circa AD 1300
Direct-Lipped	9	 E I	Occasionally seen on white or redware bowl sherds in this assemblage, this shape seems more related to White Mountain Redwares than to Rio Grande glazes; although it presages those later developments

* E = exterior I = interior

Table 8-3
(continued)
DESCRIPTIONS OF CERAMIC VARIABLES

PRIMARY PAINT TYPE	CODE	DESCRIPTION
No paint	0	absence of attribute
Carbon	1	ranging *occasionally on one sherd* from a misty, translucent dark stain, through a dense black which soaked and/or was polished into the surface; with 'fuzzy' edges resulting from paint bleeding into areas adjacent to the applied design; flat, on or in the surface, with no relief added even when viewed at oblique angles at high magnification
Carbon-Mineral Mix	2	ranging from (1) above with grains, streaks, and/or patches of dense opaque pigment; to dense, solid applications with relief added to the vessel surface, while displaying the 'fuzzy' edges of carbon pigment absorption into the adjacent surfaces
Mineral	3	(Nonglaze) dense, hard edged opaque coverage, possibly best typified by Cibola and northern Mogollon wares where the dull, very black to red, pigment clearly 'sits on top of' a brilliant white surface. In highly polished wares such as Mimbres and Magdalena (full surface), the relief which mineral pigments add to a surface is compressed and much less apparent, but the dense opaque coverage and lack of edge blurring remain good criteria
Glaze	4	any paint that fired to a glassy, reflective state; ranges from gritty black to a golden green sheen in the sherds analyzed
Matte White	5	presumably kaolin, primarily on redware exteriors; a soft white pigment (often fugitive) used to create the Polychromes of the White Mountain and Magdalena Redwares, and continued into the Rio Grande Glazeware series
Glaze and Matte White	6	(4) and (5) above, on the same surface
Carbon-Matte Black-Glaze	7	a sort of subglaze (i.e., some did and some did not) where only portions of the pigment were either chemically correct or fired properly to glaze; providing grains, streaks, and patches of glaze in a field of carbon-mineral (2 above) pigment: not uncommon on St. Johns and Magdalena Redwares.

Table 8-3
(continued)
DESCRIPTIONS OF CERAMIC VARIABLES

WORKED SHERD TYPE	CODE	DESCRIPTION
Not worked	0	attribute absent
Drilled	1	drilled (in order to tie a crack closed or for wear as a pendent); generally conical or biconical holes through the sherd
Ground	2	rounded or bevelled edges (as result from use as a scoop, a scraper, to finish other pottery in the leather stage, or to strip seeds off grasses into a threshing basket); wear contours and striae may be distinctive
Disk-Gaming Piece	3	most any sherd clearly ground to shape, generally from checker to saucer size; we presume they mean something, but are often unable to propose "what"

SMUDGE-POLISH TYPE	CODE	DESCRIPTION
No Smudge	0	attribute absent
Interior	1	e.g., Reserve, Los Lunas, and Magdalena vessels
Exterior	2	occurs, but not common

The coded analysis forms were copied and submitted to Chambers Group, where the data were entered in dBase III+ in a standard dBase format. Queries were then run in dBase III+ and KWIKSTAT to provide provenience, type, and attribute accounting and to gain an idea of which further relational statistics to apply.

8.3 GENERAL RESULTS - WHITEWARES

8.3.1 Magdalena Whitewares

The Magdalena Whiteware centerline description (Knight 1981:10-15) calls for creamy buff white, well-finished surfaces, with a glossy polish (80% plus of the type sample) over both the surface and the carbon pigment (99.9%) paint. These were applied to a paste which was most often a "sandwich" of brown surface-gray center-brown surface (35%), or gray (18%), brown (17%), or buff (11%) in color; with angular rhyolite temper present in 98.1% of the type sample. The paste is soft, friable, and breaks easily in most cases. These are the basic criteria for differentiating Magdalena Whitewares. The current analysis focused on these and other attributes in hopes of defining some further relation to the ceramic cosmos of thirteenth century New Mexico.

Six hundred eighteen sherds were classified as Magdalena Whiteware: 442 from bowls, 169 from jars, 1 piece of a ladle, and 6 sherds of undecipherable vessel type.

As Table 8-4 indicates, there is a low percentage of paint aberrance, with the occurrence of mineral pigment on a few sherds. Those few are, however, well polished over a Magdalena paste and temper. If found in any abundance, these could well be called Magdalena Black-on-white - Tularosa variety, for at first glance they would be classed as a polished-over-paint Tularosa Black-on-white or a "North Plains Black-on-white".

Table 8-4

MAGDALENA WHITEWARE: VESSEL TYPE BY PAINT TYPE 1

VESSEL TYPE	UNDIFFERENTIATED		BOWL		JAR		LADLE		TOTALS	
0. Unpainted	6	0.9%	100*	16.2%	58	9.4%	0		164	26.5%
1. Carbon	0		337	54.5%	111	17.9%	1	0.2%	449	72.7%
2. Carbon-Mineral	0		4	0.6%	0		0		4	0.6%
3. Mineral	0		1	0.2%	0		0		1	0.2%
TOTALS	6	0.9%	442	71.5%	169	27.3%	1	0.2%	618	100.0%

Only four Black-on-white sherds retained interior (Paint 1) and exterior (Paint 2) design elements, and all of these are carbon pigment. No bowl sherds were found to have only exterior design elements, nor were any interior decorations found on jar sherds.

The paint coverage/density typical of Magdalena Black-on-white ranges from a thin transparent coverage to a dark solid obliteration of the surface.

The "black" ranges from Munsell 7.5YR2/0 and 2.5/0, to 7.5YR3/0, across the span of transparent and opaque varieties. A low percentage, but consistently present, varietal of Magdalena "Black"-on-white, has an impressionistically blue-black tone to the paint, which is not well represented in the Munsell charts.

The "white" surfaces upon which the paints were applied are most like Munsell colors 5YR7/3 and 7.5YR7/4; but the range is known to include 5YR7/0 through shades of gray-white to near 7.5YR7/0 and 7/2. There are also a very few very white sherds approaching 7.5YR8/0. The "whites" on the buff-yellow end of this spectrum are also the sherds which have the "blue" tone to their "black" paint.

As in the 1977 assemblage (Knight 1981:15), the vast majority of Magdalena Whiteware rims in the 1987 assemblage (Table 8-5) are direct rims with only such minor variation as thinning (0.9%), mild eversion (1.9%), mild inversion (1.9%), and bevelling (3.8%). The only other thinned rims in the total assemblage are Magdalena Utility Ware (N=14) and Elmendorf Black-on-white (N=1). Everted rims are especially common in the Magdalena Utility Wares (N=52), and occur in Cibola Corrugated (N=1) and White Mountain Redwares (N=1). Mildly inverted rims have only been found on two Magdalena Black-on-white bowl sherds from the 1987 ceramic assemblage. Direct bevelled rims comprised 17.9% of the 1977 Magdalena Black-on-white type definition assemblage (Knight 1981:15), but only 3.8% of this 1987 assemblage. Other direct-bevelled rims are only found on White Mountain Redwares (N=1) and Magdalena Utility Wares (N=4) in this analysis.

The 94 Magdalena Black-on-white bowl rim diameter estimates ranged from 10 cm to 28 cm with a mean value of 19.55 cm (SD=4.27). This is a bit smaller than the 24 cm average of the four reconstructable vessels in the 1977 assemblage.

The eight Magdalena Black-on-white jar rim diameter estimates range from 10 cm to 24 cm with a mean of 16.8 (SD=6.72). Although hampered by small sample size, this is in good agreement with the 14 cm and 17 cm diameters of the reconstructible vessels in the 1977 assemblage.

No ladles were reported in the 1977 assemblage. The one ladle sherd in the present analysis included a major portion of the vessel body and rim and had an estimated diameter of 10 cm.

No Magdalena Whiteware sherds were found to be worked sherds, nor were there any intentional smudges found on the whitewares in this assemblage.

Table 8-5

MAGDALENA WHITEWARE: RIM FORM BY TYPE AND VESSEL

Rim Form	Magdalena B/w Bowl		Magdalena W/w Bowl		BOWL TOTALS		Magdalena B/w Jar		Magdalena W/w Jar		JAR TOTALS		GRAND TOTALS	
Direct	88	83.0%	2	1.9%	90	84.9%	4	3.8%	3	2.8%	7	87.5%	97	91.5%
Direct Thinned			1	0.9%	1	0.9%					0		1	0.9%
Everted			1	0.9%	1	0.9%	1	0.9%			1	12.5%	2	1.9%
Inverted					0						0		0	
Direct Corrugated					0						0		0	
Direct Inverted	2	1.9%			2	1.9%					0		2	1.9%
Strong Everted					0						0		0	
Direct Bevelled	4	3.8%			4	4.1%					0		4	3.8%
Direct Lipped					0						0		0	
TOTALS	94	88.7%	4	3.8%	98	92.5%	5	4.7%	3	2.8%	8	7.5%	106	100%

In general, the range in characteristics of the Magdalena Whitewares in the present assemblage is essentially identical to that defined by Knight (1981). The paste, and high temper to paste ratio, appear distinctly Mogollon. The "crushed rock" angular rhyolite temper is more characteristic of the northern wares. Few other whitewares have as high a percentage of a soft, friable paste; as with any handicraft, this trait is variable.

The surface treatment, especially the high polish, is only common to Alma Plain, Mesa Verde Black-on-white, some White Mountain Redwares, and Mimbres Black-on-white. All the geographically adjacent whiteware traditions (Cibola, Cebolleta, Reserve-Tularosa, and Socorro-Elmendorf) are not typically polished over the painted designs and surfaces in the manner found on Magdalena Whitewares. There is a low-percentage-but-wide-range of overlap with other contemporary traditions in the technical appearance of the "slipped" or compacted surfaces under the paint. Sherds with Magdalena paste and temper carry surfaces ranging from a thin compacted gray float similar to Socorro Black-on-white, through a thick white, often crackled, surface similar to Tularosa or Mesa Verde Black-on-white, to a distinctly "beige-buff-almost-yellow" cast which may presage later developments in the Zuni area. However, the most frequently occurring case is a fairly thick cream white, with off-whites of a buff or gray cast next in predominance.

Two particular notes about the surface appearance of Magdalena Black-on-white, especially undecorated bowl exteriors and the lower portions of jars should be remembered. The exterior surfaces of these sherds frequently bear a resemblance to eastern Alma due to their well finished buff-brown surfaces. A second southern similarity is variability in the evidence of firing controls, observable on larger sherds and reconstructable vessels. The exterior of one vessel often has patches of gray, brown, and/or buff, with fire-clouding not uncommon (very much like Mimbres Black-on-white). However, due to the carbon paint, (oxidized mineral paint), Magdalena Black-on-white is not known to have the red variant which is so frequent in the mineral paint Mimbres.

Table 8-6 is an attempt to describe the centroids of the whitewares which are most often compared to, or found with, Magdalena Black-on-white. As with any simple summary, it decreases in accuracy with distance from the center of any described type's distribution. Further, as with any loaded gun, you can blow your foot off with it...if you use it indiscriminantly. However, if the user remembers where on earth the sherds in question were found, and applies some common sense interpolation, it may prove useful.

8.3.2 Magdalena Redwares

The Magdalena Redwares appear to be local varieties of regional contemporaries. They are generally constructed on the same paste and temper as the Magdalena Whitewares and Utility Wares, but do not generally appear slipped in a different clay (Knight 1981:16). The surfaces range from scraped to very well floated, and are generally well polished. In some examples a layer of paste clay sans-temper may have been applied early in the wet leather stage of manufacture, but there is seldom a clearly definable slip visible in cross section. Three exceptions to this general category are sherds of an Incised Redware and a Red

Table 8-6. NORMATIVE ASSUMPTIONS AND CRITICAL CRITERIA FOR TYPE DESIGNATION: WHITEWARES
(from type descriptions and sherds in the H.P. Mera Collection, Santa Fe)

TYPE:	Magdalena Black-on-white	Mesa Verde Black-on-white	Elmendorf Black-on-white	Socorro Black-on-white	Mimbres Black-on-white	Tularosa Black-on-white and Cebolleta Black-on-white	Cibola Whitewares
PAINT:	carbon	carbon	carbon	mineral	mineral	mineral	mineral
POLISH:	overall	overall	none	seldom	over paint	under paint if polished	seldom
SURFACE:	glossy with some irregularities	glossy, smooth	scraped, rough, but roughly even	smooth	glossy with some irregularities	scraped smooth, glossy	smooth, glossy
COLOR:	Cream white to buff-biege-yellow; occasionally crackled	white, gray to off-white; often crackled	chalky white	dull gray	cream white to chalky white; occasionally crackled	brilliant white to off-white; very often crackled	clear to bright white
PASTE:	sandy brown/gray-brown, buff	fine light gray	silty dark gray	silty dark gray	sandy brown to gray-brown	fine gray white to white; Cebolleta is more gray	fine white
FRACTURE:	soft, crumbly	hard, even	medium, ragged	medium, even	soft, crumbly	medium to hard blocky	hard, blocky to even
CARBON STREAK:	occasional	seldom	common	common	common	common	seldom
TEMPER:	High percent Gray angular Rhyolite Quartz & feldspar Red-pink rhyolite Sherd, mica, gold Black & rust bits	Medium percent Gray angular Andesite Sherd Crushed sandstone Rounded quartz grains with chalcedonic matrix	Low percent Sherd Fine "sands" Black specks of basalt or sherd Quartz, feldspar, mica	Low percent Fine sherd Fine "sands" Black specks of basalt or sherd Quartz, feldspar, mica	High percent Multilitic sands Subangular to rounded pieces Quartz & feldspar Rhyolite, latite Gold	*Tularosa* Medium percent Sherd Quartz Feldspar Quartz *Cebolleta* 2/3 fine sands 1/3 sherd, basalt, and feldspar	Low-Medium percent Sherd Crushed Sandstone Rounded quartz grains with chalcedonic matrix attached
DESIGNS:	Late Red Mesa through St. John's: Loose hatchure, scrolls and panels, medium to broad rim bands and panel framers; Mosquito Metting; 2-tone checkerboards; pendant dots; squiggle-splotch lines; polka dot-dashes like Klageto; interlocking stepped frets; large dots-dashes between parallel lines.	"Mesa Verde"; dense banded and opposed or interlocking panels, busy fine hatchure; medium and fine rim bands and rim ticking	Not well defined though similar to Socorro or a "carbon paint Chupadera" with a lousy surface finish	Broad pennants with narrow lines; some hatchured lines and panels, pendant dotes, checkerboards	"Mimbres"; medium and/or fine line rim bands, dense fine line geometrics and Zoo-Anthro-morph artwork	"Tularosa" negative; dense fine hatchure panels, lines, and scrolls with opposed solids, mosquito netting; Early Cebolleta is Red Mesa; Late Cebolleta is a loose Late Tularosa; triangular and rectangular scrolls; and interlocking scrolls with opposed stepped fret centers. "The exact point of separation between Tularosa and Cebollleta...is admittedly arbitrary" (Dittert, 1949:52)	Sosi-Dogozhi-Chaco; very fine line hatchure in scrolls and panels often with opposed penants and solids, but more open than Tularosa

Table 8-7

MAGDALENA REDWARES: VESSEL TYPE BY SURFACE OR PAINT

Surface	Undifferentiated		Bowl		Jar		Miniature		TOTALS	
Plain Red	1	1.8%	10	17.8%	6	10.7%	1	1.8%	18	32.1%
Indented Corrugated					1	1.8%			1	1.8%
Incised					3*	5.4%			3	5.4%
	BOWL				JAR					
Paint	Paint 1		Paint 2		Paint 1		Paint 2		TOTALS	
1. Carbon	3	5.4%							3	5.4%
2. Carbon-Mineral					1	1.8%			1	1.8%
3. Mineral	6	10.7%			2	3.5%			8	14.2%
4. Glaze	13	23.2%	(1)**	(1.8%)	2	3.5%			15	26.8%
5. Matte White	1	1.8%	(4)	(7.1%)					1	1.8%
6. Glaze and Matte White			(1)	(1.8%)			(1)	(1.8%)		
7. Carbon-Mineral-Glaze	6	10.7%							6	10.7%
TOTALS	39	69.6%	(6)	(10.7%)	15	26.8%	(1)	(1.8%)	56*	100.0%

* Includes two "Playas Incised" sherds possibly not local
** (x), (x.x%) = secondary colors on Polychrome sherds

Indented Corrugated which have a distinct red exterior layer added to their buff brown pastes; and Magdalena Polychrome, which does appear to have an added layer of red or white slip. Magdalena Redwares comprised 4.04% (N=358) of the 1977 assemblage but only provide 1.78% (N=54) of this analysis.

In the 54 Magdalena Redwares, there are 39 bowl sherds, 15 jar sherds, one sherd of some sort of miniature vessel (bowl? ladle?), and one sherd of indecipherable vessel type. Interestingly enough, the ratios of vessel types are quite close to those of the Whitewares in this analysis.

	Undifferentiated	Bowls	Jars	Other
Whitewares	0.9%	71.5%	27.3%	0.2%
Redwares	1.8%	69.6%	26.8%	1.8%

As Table 8-7 indicates, there is a wide variety of surface decoration and paint character in the Magdalena Redware assemblage. The seven Magdalena Polychrome sherds include one jar with black carbon and matte white paint design on the exterior; one bowl with a black carbon paint interior and matte white on the exterior; one bowl with a black mineral paint interior and matte white on the exterior; two bowls with a glaze paint interior, one with matte white exterior, and one with glaze and matte white exterior; and one bowl with matte white on the interior and glaze paint on the exterior.

Magdalena Black-on-red vessels are represented by 27 sherds with five paints present.

Paint Type	Bowls		Jars		TOTALS	
1. Carbon	2	7.4%	0		2	7.4%
2. Carbon-Mineral	0		1	3.7%	1	3.7%
3. Mineral	4	14.8%	1	3.7%	5	18.5%
4. Glaze	11	40.7%	2	7.4%	13	48.2%
7. Carbon-Mineral-Glaze	6	22.2%	0		6	22.2%
TOTALS	23	85.2%	4	14.8%	27	100.0%

Obviously, these sherds may represent portions of Polychrome vessels lacking the second color; even though the validity of Magdalena Black-on-red was clearly demonstrated by the two reconstructible jars reported from the 1977 assemblage (Knight 1981:16-19).

Only three bowl rim sherds represent redware vessels; two direct Black-on-red rims and one direct Polychrome rim. One of the black-on-red bowl rims provided a small (14 cm) estimated diameter; the other, a 24 cm diameter; giving a lean mean of 19 cm. Comparatively the 1977 analysis reports only direct rims with a slight eversion on jar sherds and a slight inversion on bowl rims. (White Mountain Redwares in the present analysis include four rims; two direct, one mildly everted and one direct-bevelled; the only lipped rims are one Arenal Glaze polychrome and one Pinedale/Heshatauthla Polychrome.)

With the exception of the Magdalena Black-on-white bowl rims from the 1987 assemblage, rim diameter calculations and comparisons are hampered by small sample sizes (Table 8-8). Despite that, there appears a central tendency for bowl diameter means to cluster at 19 to 20 cm.

No ladles have been found in the 1977 or 1987 Magdalena Redware assemblages, although one miniature bowl-like sherd from 1987 could be part of a ladle. No redwares were found to be worked sherds, nor did any retain an intentional smudge.

In contrast with the 1977 assemblage, which only included Black-on-red jar sherds and polychrome bowl sherds, the 1987 Magdalena Redware assemblage includes both bowl and jar sherds with Black-on-red and Polychrome finishes. These continue to be constructed on essentially the same paste as the Whitewares and Utilities, with similar finishing techniques to the whitewares in smoothing, overall polish, and surface float-compaction with occasionally apparent slips. The painted redwares, especially those with matte white or glaze paints, do not necessarily appear polished over the paint. The more carbon in the paint mix, apparently the more likely the potters were to polish over the paint; although a few mineral, matte white, and glaze paints were apparently polished-over. This assemblage is thought to represent the period immediately prior to the replacement of whitewares by glaze on redwares, and the multiplicity of paint character and surface treatments on the redwares from LA 1178 is probably a good indication of the experimentation involved in that process.

The 1977 analysis reported six sherds of a Magdalena "Playas Incised correlate" (Knight 1981:18): a local paste and temper, red slipped, incised ware that surely correlates with that common incised redware of southern New Mexico and northern Mexico. Three sherds of Incised Redware were present in the 1987 assemblage: one is obviously local in paste and temper but one of the other two was found by petrographic analysis to be "...also tempered using a rhyolite porphyry. However,...compositionally quite different from the other sherds (Magdalena Ww, Rw, and Utilities) tempered with rhyolite porphyry" (Hill, Appendix E). Hill cites the massive range of rhyolite materials available in the Mogollon-Datil Volcanic Field, and leaves the possible origin wide open (much of southwest New Mexico consists of rhyolite!). As with the Magdalena Whitewares and Utility Wares, the presence of Incised Redwares implies that there was a southern connection in ceramic technology.

One other interesting local redware is a sherd of Red wash/slip Exuberant Indented Corrugated, with coils 15 mm crest to crest and of 5 mm exposed width. The red surface is worn off the highs of the coils as if through use. This sherd is clearly of Magdalena paste and temper, and a reasonable experiment in light of the "Playas" and Magdalena Red Incised sherds present in the assemblages from 1977 and 1987. [Note: a very similar sherd of Red slip Indented Corrugated is in the H.P. Mera collection from LA 1180 (across the creek from LA 1178) at the Laboratory of Anthropology in Santa Fe.]

Table 8-8

RIM DIAMETERS

TYPE	BOWL RIM DIAMETERS (cm)					JAR RIM DIAMETERS (cm)				
	N	Min	Mean	Max	S.D.	N	Min	Mean	Max	S.D.
Magdalena Black-on-white 1977	3	21	27	32	-	2	14	15.5	17	-
Magdalena Black-on-white 1987	88	10	19.545	28	4.275	5	10	16.80	24	6.72
Magdalena Whitewares 1987	4	18	21.0	26	3.830	3	10	11.333	12	1.15
Magdalena Redwares 1977	1	-	28	-	-	2	17	19	21	-
Magdalena Redwares 1987	3	14	19.3	24	-	0				
White Mountain Redwares 1987	3	12	19.3	26	-	0				

Overall, Magdalena Black-on-red and Polychrome appear most directly related to St. John's of all the White Mountain Redwares (Carlson 1970), although North Plains (Danson 1957; Dittert 1959) and Kowina Redwares (Dittert 1949, 1959) are neighboring parts of this constellation. Likewise, Arenal Glaze Polychrome is "plainly derived from a Little Colorado ancestry" (Mera 1933). Although most Magdalena Redwares are identifiable by the gray or gray-pink rhyolite temper and sandy pastes, there are examples with a higher percentage of sherd temper and finer pastes, just as there are White Mountain Redwares without a black center paste. Further, Magdalena Polychromes appear to have their designs in banded layouts more akin to Arenal, but, remember, Arenal also varies widely into White Mountain Redware design motifs.

On a good day, sherd-tempered St. John's, Magdalena Polychrome, Arenal Glaze Polychrome, North Plains, and even Kowina Black-on-red or Polychrome could be difficult to separate; on a bad day, next to impossible. To do so, one must search the paste diligently and pray for distinctive bits of temper: gray to pink angular rhyolite for Magdalena; quartz and white-buff-gray sherd for St. John's; bits of basalt for Kowina; and quartz-mica-dark (burnt) sherd for Arenal and Rio Grande wares. One must realize at the outset that almost none of these categories are mutually exclusive, even near the center of each type description.

Despite this profusion of confusion, Table 8-9 is provided in an attempt to provide some simple attributes which may be used arbitrarily to discriminate between redwares common to west-central New Mexico. Keep in mind that there is probably little good done in general field survey by agonizing over the exacting geologic/cultural origin of a piece of A.D. 1300 sherd tempered redware or polychrome. It would be nice to "know"; but precise definitions continue to escape petrographers and geochemists, let alone the crew member with a hand lens. In short, use it, but again don't shoot your foot off.

Further, as Emma Lou Davis so aptly said, the populations of that era were in a "MOVE-settle-MOVE" mode (1964) rather than necessarily being sedentary in a multigenerational sense. Thus, the ceramic distributions of those times were subject to considerable fluidity. The amazing spread of St. John's Polychrome (in whatever "local" form) over much of New Mexico and Arizona is, most likely, first hand evidence of that state of flux. The family manufacturing Tularosa Black-on-white and White-on-red in the Tularosa Valley may well have been manufacturing Cebolleta Black-on-white and Kowina Redwares in the "most Tularosa like parklands" (Dittert 1959) of Cebolleta Mesa within a generation or two.

Certainly as the proto-Laguna folks moved south past present Laguna-Acoma (Hawley-Ellis, 1973), they left a trail of "Intrusive Mesa Verde black-on-white...in a north-south band between McCartys and...Mesita" (Dittert, 1959). We agree with Davis (1964) that these folks ended up at LA 1178, within a generation or two, making 1) a carbon painted whiteware; and 2) a local White Mountain Redware which later was not in their repertoire during their passage south. Danson (1957) contends that the Rio Salado was a fairly firm dividing line between the mountain brownware and plateau grayware producing populations. Thus, as the folk of our affection moved south, they undoubtedly left a trail of "Mesa Verde Whiteware" translated at each location by attempts to fit locally available materials into

Table 8-9. NORMATIVE ASSUMPTIONS AND CRITICAL CRITERIA FOR TYPE DESIGNATION: REDWARES
(from type descriptions and sherds in the H.P. Mera Collection, Santa Fe)

TYPE:	Magdalena Polychrome and Black-on-red	St. John's Polychrome and Black-on-red	Arenal Glaze Polychrome	North Plains Polychrome and Black-on-red	Kowina Polychrome and Black-on-red
PAINT:	Black carbon to glaze; fuzzy edge matte mineral to dull black glaze to vitrified with moss green to coppery gloss; Matte white kaolin	Black carbon/mineral to glaze; "always" has fuzzy edges; tendency to brown tinge; from brown matte stain to matte glaze to some shiny glaze; Matte white kaolin	Matte to dull glaze black; thicker, with sharp edges; some purple tinges Matte white kaolin	Black to reddish matte black; some carbon mixture (?) Matte white kaolin	Heavy matte black, from specks of glaze to almost complete glaze Matte white kaolin
POLISH:	all decorated surfaces	polish overall under paint	polish overall under paint	polish over paint	difficult to determine due to slip
SURFACES: (colors)	Glossy with some irregularities; compacted red surfaces; white slip bowl interiors; brown to dark brick red; some red floats and slips; white slip often impermanent	Glossy, smooth, with few irregularities; complete interior and exterior red slip (very few white slip bowl interiors, late) (Showlow- Springerville-Kwakina); orange to red, light brick red; "on some vessels the slip has scaled off"	Glossy, smooth with irregularities; dark orange-red or maroon red slip on interior and exterior, to thin slip-float or compacted surfaces; white slip interior=San Clemente G-Poly;	Most resembles Wingate but "a temporal hiatus and stylistic differences form dividing points" (Dittert, 1959); thick red slip on bowl interiors and bowl and jar exteriors	Glossy but bubbly and wrinkled; red to yellow red slip on bowl interiors and jar and bowl exteriors
PASTE:	Sandy brown to reddish brown; often light red to brownish red exterior and gray to gray-brown interior; some brown center	White to light gray, some buff, pink, or black	Silty dark gray to light gray; brown with a dark core	White to gray, buff, or pink(?)	
FRACTURE:	Soft, crumbly to slightly blocky	Medium to hard, blocky to even	Medium to hard, even	Hard, blocky to even(?)	
CARBON STREAK:	seldom	frequent			
TEMPER:	Medium to high percent; gray to gray-pink angular rhyolite; quartz, feldspar, sherd; multilithic sands; black, rust and mica specks; temper often shows on surface	Medium percent; SHERD - black, white, red or buff; angular fragments which in most cases appear to be crushed sherd; some crushed rock or rounded quartz; temper seldom shows on surface	High percent; very fine basalt and sherd; high percent of dark gray and red sherd, black, white and gray also present; vitreous quartz, some silvery mica	Fine rolled sand and angular sherd of white, buff, red, or black(?)	
RIMS:	direct round or square, some bevelled; jars slightly everted	Direct-Inverted; most bevelled, some lipped; some slight thickening	Direct, bevelled	Direct bevelled lipped; some thickening	
DESIGNS:	Matte white and/or black designs on exteriors in both narrow (3 mm) and broad (15 mm) lines; matte to glaze green "black" motifs on interiors and exteriors; bowl exterior designs from bold St. John's, to banded panels tighter than Kwakina Polychrome; jar designs between equator and neck, and bowl interior designs in a broad panelled bank around the bowl wall, in quartered or repetitive opposed stepped solids, stepped terrace clouds; loose hatchure or parallel lines and mosquito netting; dotted eyes	White motifs on exterior; white over black outlined motifs on exteriors and few interiors; bold, broad line, open exterior motifs; dense, Tularosa Interior designs; scrolls, stepped frets and interlocked geometrics of opposed hatchure and solids; hatchure and solids about equal in percent of design; interior and exterior designs are not alike; looser draftsmanship later	Black dull glaze on interior, white matte, and occasional black on exterior; jar designs in band between equator and neck; bowl designs in panelled band around vessel wall; pendant triangles and rectangles, hatching, cross hatching, cots, ticks, checkerboards, dotted eyes, key figures, birds and zoo-anthro-morphs; white lines on bowl exteriors	Reddish black matte occasional subglaze on interior; white exterior design comparable to St. John's-Arenal; occasional white outlines on black interior designs; more Reserve-like, late Cebolleta designs, open Tularosa with more solids	Black interior and exterior; white on exterior of bowls; and below black designs on jar; no white known on interiors; interlocked scrolls of opposed hatched and solid elements

the mental template of 'what makes a correct pot'. This created some marvelously aberrant vessels, some vessels very near to 'homestyle' and a full range of in-betweens.

The point of this sidetrip is cautionary; we urge the reader to consider the potential for attribute drift within types and wares, yet to marvel at the overall consistency in the traditions. Without those consistencies, archaeological ceramic analysis would be in dire straits.

8.4 DESIGN

In general, the sherds from the 1987 excavations were so small that design analysis was not carried out. However, selected sherds are here for reference and emphasis (Figure 8-1). The reader should also refer to Knight (1981).

8.5 GENERAL RESULTS - MAGDALENA UTILITY WARES

The "Local utility vessels range from plain to corrugated to incised to punched to patterned in surface treatment. The majority of these vessels are jars, although quite a few bowl forms are present. The local Utilities are characterized by smooth to rough surfaces, identical paste and tempering materials, and brown, black or grayish interior, exterior and paste colors" (Knight 1981:21). To that basic description we only have to add a high percentage of angular rhyolite temper in a sandy, soft paste, and we have the basic criteria for recognizing a Magdalena Utility ware. It appears to be the only large assemblage of brownwares consistently tempered with angular "crushed" rhyolite. Otherwise, the Magdalena Brownwares are more or less Reserve-Tularosa (Rinaldo and Bluhm 1956), with rhyolite temper, and the minor exception that most of the Magdalena Utilities appear to have their corrugations, indentions, punching, and patterning in a comparatively narrow band around the shoulder and/or neck rather than covering larger portions of the vessel. These brownwares comprise 71.63% of the 1977 assemblage, and 70.58% of the 1987 assemblage (Table 8-10).

Obviously, jar body plain sherds are in the majority, followed by bowl body plain sherds. In fact, jar sherds outnumber bowl sherds, distinctly converse to the percentages found in the Whiteware and Redware assemblages.

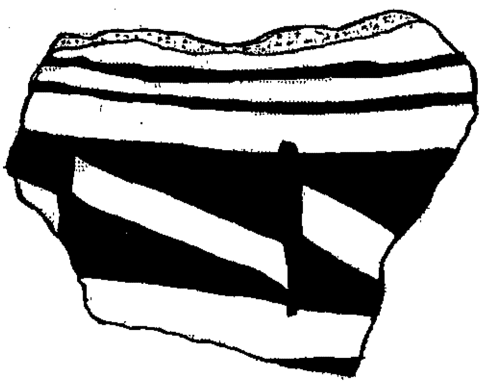
	Undifferentiated	Bowls	Jars	Others	TOTAL
Brownwares	0.7%	19.2%	79.51%	0.6%	2,137
Whitewares	0.9%	71.5%	27.3%	0.2%	618
Redwares	1.8%	69.6%	26.8%	1.8%	54

Figure 8-1

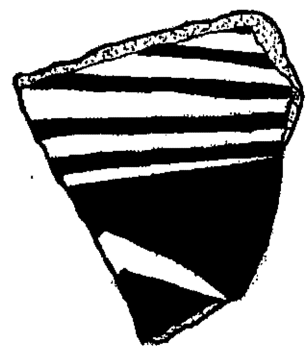
SHERD DESIGN ILLUSTRATIONS

Unusual, Exotic, and Odd Sherds

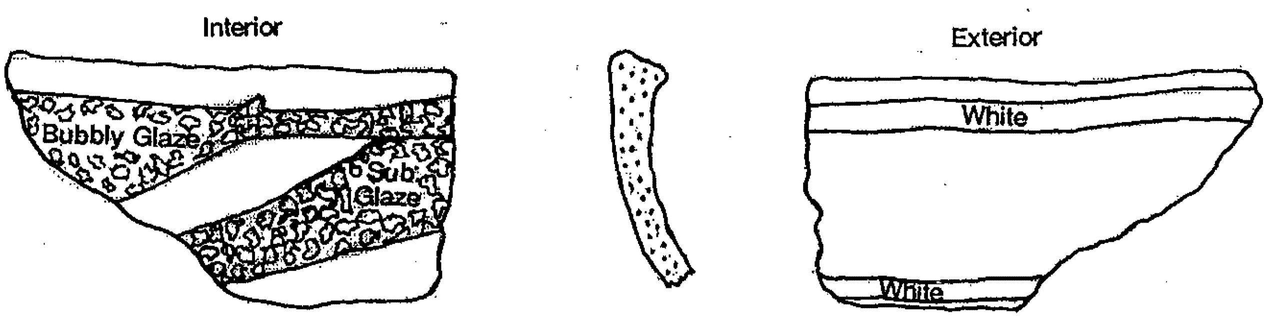
A. Carbon Reserve (!?)



B. Casa Colorado



C. Arenal Glaze Polychrome



A. This black-on-white jar sherd has a thin gray white slip on a light gray paste. The paste is tempered with very fine multilithic sand and retains a medium dark gray "carbon streak". It is a hard sherd with a mildly blocky fracture. The paint is very dense carbon pigment and the slip is partially crackled. A high gloss but streaky polish is over both the paint and slip. This may be an example of the high quality end of the Magdalena spectrum in which we did not observe the rhyolite temper, or a "carbon paint Reserve-Cebolleta" (or possibly this is the as yet undefined "North Plains Black-on-white").

B. A Casa Colorado Black-on-white bowl sherd with dark gray fine paste, a white interior slip, and traces of white "slip-slop" on the exterior.

C. A burned Arenal Glaze Polychrome bowl rim sherd, with bubbly dull black subglaze to glaze interior paint, and parallel bands of white exterior decoration.

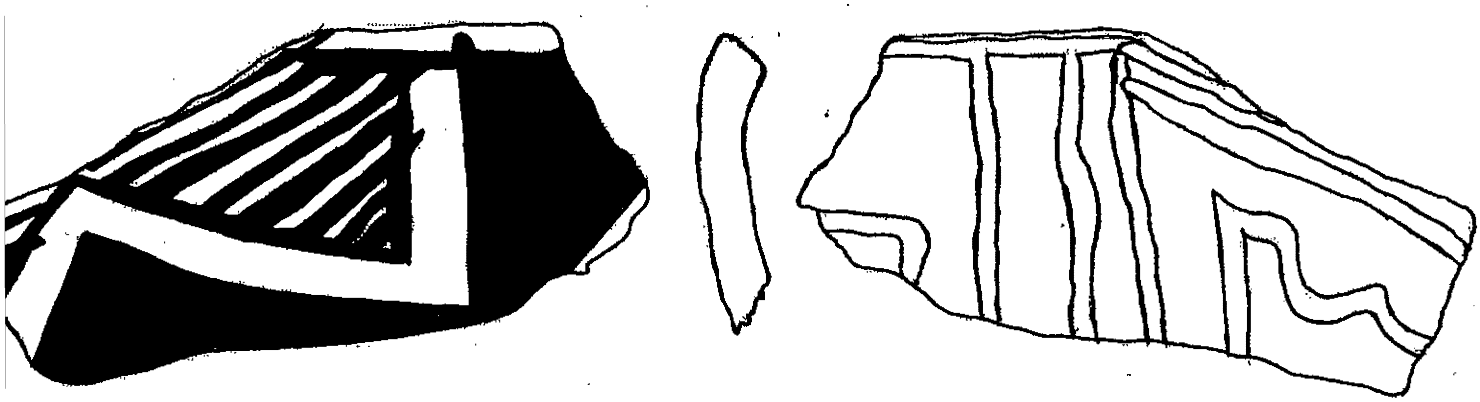
Figure 8-1 (continued)

SHERD DESIGN ILLUSTRATIONS

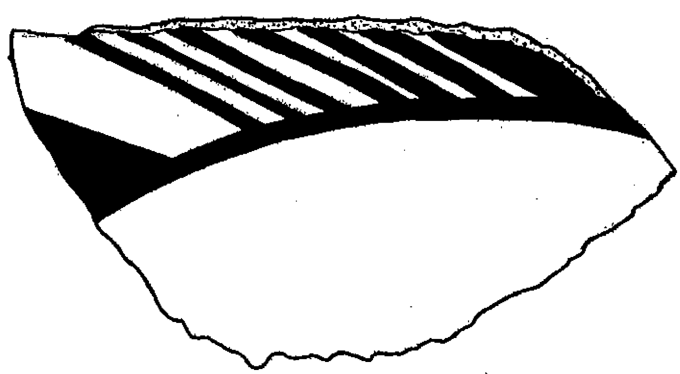
D. Arenal Glaze on Polychrome

Interior - black-on-red

Exterior - white-on-red



E. Magdalena Black-on-red



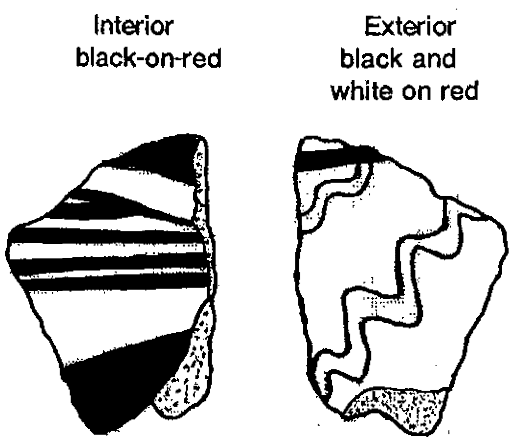
D. A good Arenal Glaze Polychrome bowl rim sherd, with a dense black subglaze interior design and a busy white exterior design on a brick orange-red body.

E. This Magdalena "Black-on-red" bowl sherd could easily be called 'red-on-orange' or a misfired 'black-on-white'. It has sherd and rhyolite temper in a buff paste with a darker core and appears compacted/floated rather than slipped. Both surfaces are well polished and thoroughly crackled and both retain fire clouds. Sherds such as this may indicate that intentional oxidation was one of the few real differences between many of the "redwares" and "whitewares" of the Magdalena tradition.

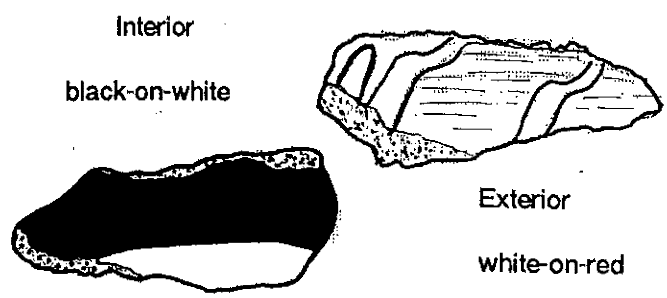
Figure 8-1 (continued)

SHERD DESIGN ILLUSTRATIONS

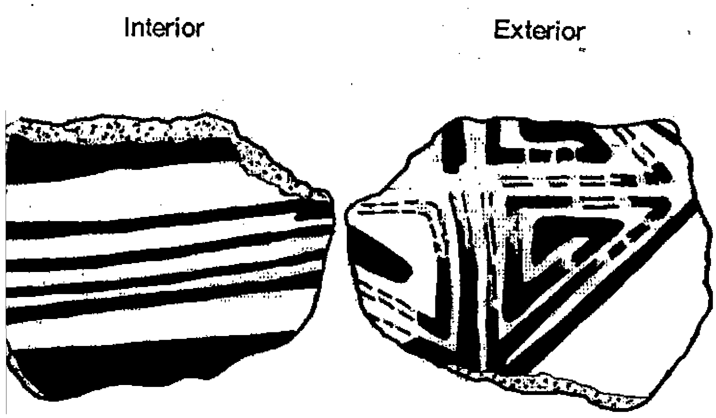
F. Polychrome



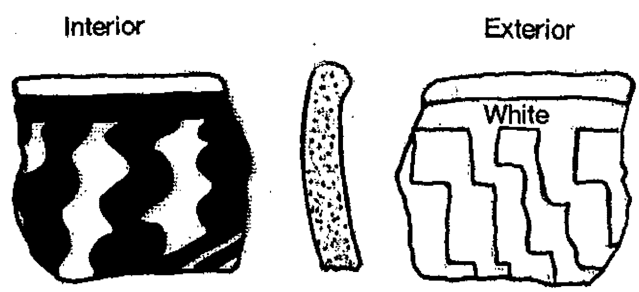
G. Polychrome



H. Pinedale Polychrome



I. Pinedale-?-Heshotauthla Polychrome



F. Appears fire-clouded, or subsequently burnt, on a black paste with very dense black mineral paint on the burnt-sienna interior surface. The brownish red exterior was decorated with black and white designs.

G. Has a very dense black mineral paint on a creamy buff interior over a light gray paste. The brownish red exterior was decorated in white and there are faint narrow black lines which may have been intentional.
F. and G. are both black and white on red. They are both primarily sherd tempered and no rhyolite was observed; thus they were classed as White Mountain Redwares rather than Magdalenan although they could easily be either. It is vaguely possible that these sherds are from one vessel, despite the observable difference in paste color.

H. Designated Pinedale Polychrome because of the black over fugitive white exterior design. The white was apparently applied only to the area intended to be painted over in the black triangular scroll pattern. Unfortunately, much of the white flaked off, removing portions of the black design. The interior black-on-red design was done in a high gloss carbon paint, and all surfaces were highly polished.

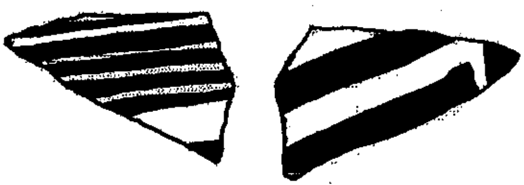
I. An olive-cast glaze-on-red interior, a white-on-red almost negative pattern on the exterior, and may have had a white lip band. Unfortunately this is a small sherd. Thus, the tentative Pinedale-?-Heshotauthla designation.

Figure 8-1 (continued)

SHERD DESIGN ILLUSTRATIONS

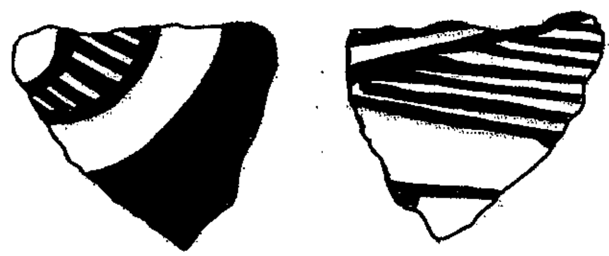
J. Zuni? Pinnawa?

Interior Exterior



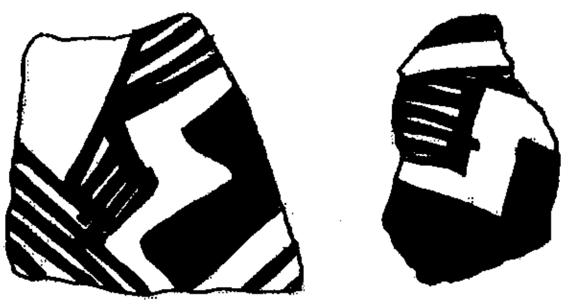
K. Magdalena Polychrome

Interior Exterior



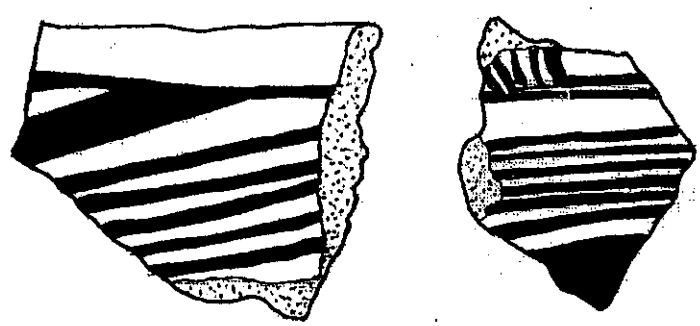
L. Cebolleta Black-on-white

Jar Bowl



M. Reserve-Tularosa Black-on-white

Bowl Jar



J. Quite small but distinctive. The interior has a bright white glossy slip with narrow parallel matte black lines. Bleeding from the edges of the black lines is a purple glaze. The exterior has a heavy black glaze over a fugitive white field on a red surface. It is possibly Pinnawa Glaze Polychrome, but might also be classed as Kourina.

K. Also small and unique to date. The interior is polished under a "normal" matte black-on-red Wingate-St. Johns appearance. The exterior is white slipped and has a "good Tularosa" pattern of narrow hatchure and framers applied in a dark brown translucent pigment with patches of glaze. The exterior is highly polished over both paint and slip. This odd couple was assembled on a Magdalena temper-paste combination which fired buff-beige. The interior and exterior are so strikingly different we are tempted to explain that different potters finished the two opposed surfaces.

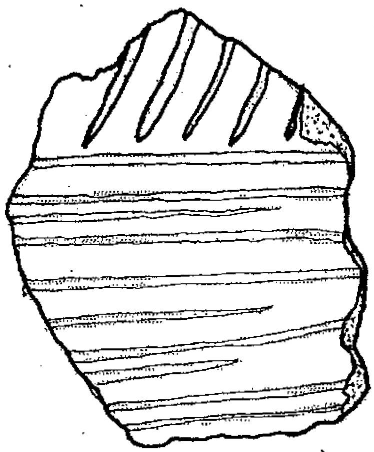
L. Cebolleta Black-on-white - a loose Tularosa with basalt particles in the temper and an occasional purple-red cast to the matte black mineral paint.

M. These sherds are good examples of the northern Mogollon-Cibolan tradition of parallel hatchure matte mineral paint on a crackled white slip. The paint fired red on the bowl example shown; black on the jar; both over a gray-white fine paste.

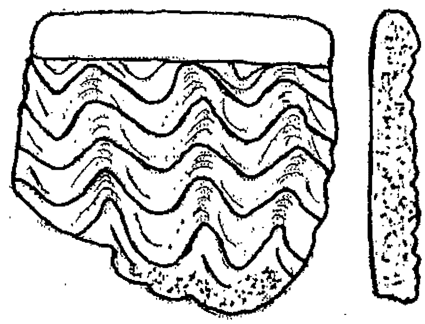
Figure 8-1 (continued)

SHERD DESIGN ILLUSTRATIONS

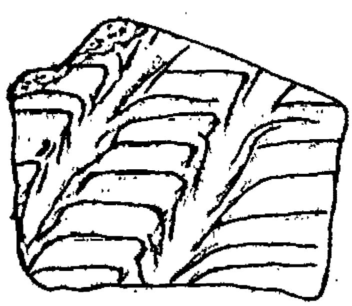
N. Magdalena Red Incised



O. Magdalena Indented Smudged Bowl



P. Magdalena "45°" Incised Corrugated



N. Magdalena Red Incised.
O. Some Magdalena Indented Corrugated is of narrow "folded" coil with an even but rough surface much like Los Lunas - Pitoche Corrugated. This example is also smudged on the interior.
P. On this Magdalena correlate of Reserve Incised Corrugated, a finger or small rounded object has been drawn across plain corrugations at about a 45° angle. This produces a visual effect similar to wide, low indented corrugations.

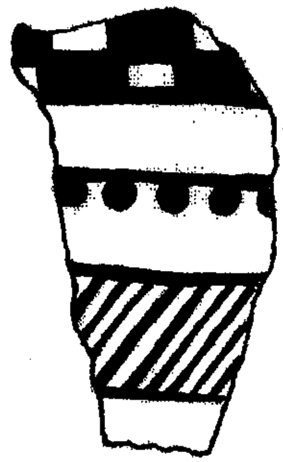
Figure 8-1 (continued)

SHERD DESIGN ILLUSTRATIONS

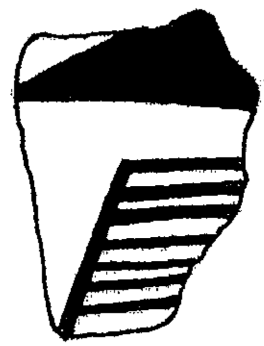
Magdalena Black-on-white:

Q. Jar

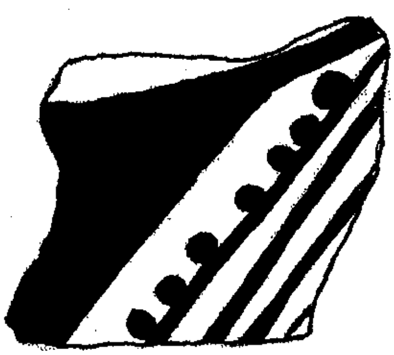
R. Jar



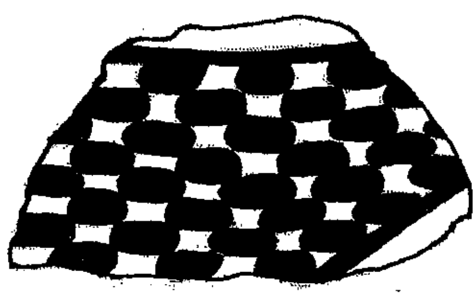
S. Jar



T. Bowl



U.



Q. Translucent blue-black carbon paint on buff background; buff-white slip; paste is dark gray next to exterior, light gray in center, and light brown on interior.
R. Black carbon paint on an off-white slip in three of the more frequent design motifs.
S and T. Blue-black carbon paint on a buff-white surface with a panel framer effect in the pennant design.
U. Polka dot-dash effect similar to that found on Klageto Black-on-white.

Table 8-10

MAGDALENA UTILITY WARES: TYPE BY VESSEL TYPE, SHERD COUNT

TYPE	UNDIFFERENTIATED		BOWLS		JARS		MINIATURES		SEED JAR		LADLE		TOTALS	
06. Plain Surface	5	0.23%	324	15.15%	1,334	62.39%	8	0.37%	1	0.05%	2	0.09%	1,674	78.3%
30. Plain Alma	0		4	0.19%	16	0.75%	0		0		0		20	0.94%
39. Plain Incised	1	0.05%	1	0.05%	1	0.05%	0		0		0		3	0.14%
08. Plain Corrugated	3	0.14%	14	0.65%	45	2.11%	1	0.05%	0		0		63	2.95%
09. Plain/Indented Corrugated	0		2	0.09%	11	0.51%	0		0		0		13	0.61%
29. Plain Surface & Indented Corrugated	0		1	0.05%	20	0.94%	0		0		0		21	0.98%
07. Indented Corrugated	4	0.19%	57	2.67%	249	11.65%	1	0.05%	0		0		311	14.55%
32. Patterened Indented Corrugated	0		1	0.05%	2	0.09%	0		0		0		3	0.14%
11. Punched Corrugated	2	0.09%	4	0.19%	19	0.89%	0		0		0		25	1.17%
41. Incised Corrugated	0		0		3	0.14%	0		0		0		3	0.14%
44. Basketmark	0		1	0.05%	0		0		0		0		1	0.05%
31. Indented Corrugated Black-on-white *	0		1	0.05%	0		0		0		0		1	0.05%
TOTALS	15	0.70%	410	19.2%	1,700	79.51%	10	0.47%	1	0.05%	2	0.09%	2,138	100.00%

* One sherd - Magdalena Black-on-white bowl with an indented corrugated exterior, or a Magdalena Indented Corrugated with a Black-on-white interior

As with the Redwares, there is a lot of diversity in the surface treatments applied to the Brownwares. In addition to the exterior surfaces, the interiors of about 70% of the bowls, and 5% of the jars, were intentionally smudged.

8.5.1 Magdalena Utility Wares: Intentional Smudge

Smudging is presented at this stage of the discussion to illustrate a point about the interrelation between plain and decorated utility sherds, which needed to be mentioned before we get too far afield with type and vessel enumeration. In addition to the high percentage of smudged bowls versus smudged jars, notice the remarkable unanimity in the range of percentages across all the fields of comparison (Table 8-11). All sets are within a four point range except the "Smudge % of Type Total" (±3.1%) and the percent of bowls smudged (±12.0%!).

This is most likely a result of two factors. First, as mentioned elsewhere, smudged bowls are a known component of the Magdalena Utility ware assemblages, and second, many of the "...sherds were indented corrugated on the neck and/or shoulder only, the remaining portion of the vessel being left plain" (Knight 1981:27).

The typical patterns (Knight 1981:21-36 and photos) include bowls with fillet rims and a corrugated band of width ranging from only a few rows of corrugations immediately below the rim, to a corrugated band extending about halfway down the wall of the vessel; and, jars with a shoulder band, roughly 5 cm (±4) wide, of any variety or combination of varieties of corrugations, ranging from a zone encircling the vessel approximately one-third of the vessel height below the rim, to a corrugated zone extending across roughly the upper third to half of the jar. (Also see Rinaldo and Bluhm 1956:168b, 172a,c, 179.) There also appears to be a small number of vessels corrugated over the entire body in one or several combinations of corrugation styles and treatments. Currently there is no clear evidence for vessels with completely plain bodies.

In attempt to observe for this phenomena represented in the pieces of those vessels, we added separate "type" categories (Table 8-2) which were: Type 9 Plain/Indented Corrugated, and Type 29 Corrugated-Plain Body Junction. Unfortunately the assemblage only contained 20 plain body-corrugated junction sherds and 13 plain and indented corrugated sherds. We would suggest that this is partially a result of the incipient fracture line caused by the change from one surface treatment to another; thus, the corrugated portion of a sherd is probably more likely to fracture at the frontier where the surface treatment changes. This would provide expectably fewer sherds with both plain body and corrugations present. However, an alternative explanation which to us is equally probable, is that the vast majority of the vessels are characterized by the few rows of corrugation below the rims of bowls and on the shoulders of jars; proportionally providing the large number of plain sherds observed in the assemblage. This is based on the observation that, with the exception of the known presence of smudged bowls with a row of corrugated coils (or full corrugated body), the percentage of smudge across the assemblage are as consistent

Table 8-11

MAGDALENA UTILITY WARES: INTENTIONAL SMUDGE

TYPE	BOWLS # of Bowls	BOWLS % of Type	SMUDGE # of Bowls	SMUDGE % of Bowls	PERCENT OF TYPE	JARS # of Jars	JARS % of Jars	SMUDGE # of Jars	SMUDGE % of Jars	PERCENT OF TYPE	OTHER VESSELS Total	OTHER VESSELS #	OTHER VESSELS % of Type	1987 SMUDGE Total	1987 SMUDGE % of Type	1977 SMUDGE Total	1977 SMUDGE % of Type	TOTAL SHERDS
06. M. Plain Body	324	19.4%	218	67.3%	13.0%	1,334	79.7%	73	5.5%	4.5%	16	1	6.3%	292	17.4%	812	15.99%	1,674
07. M. Indented Corrugated	57	18.3%	51	89.5%	16.4%	249	80.1%	11	4.4%	3.5%	5	0		62	19.9%	1,012	25.09%	311
All Others (08, 09, 11, 29, 30, 31, 32, 39, 41, 44)	29	18.9%	19	65.5%	12.4%	117	76.5%	2	1.7%	1.3%	7	0		21	13.7%	252	15.08%	153

as Table 8-11 demonstrates. We tend to think it is that simple; but, without a fairly large number of reconstructable utility vessels, have not devised a means of more rigorous demonstration. We would welcome suggestions on dealing with this quandary.

The actual range of surface treatments found in the 1987 Utility ware assemblage includes several minor varieties not present in the 1977 assemblage. It also lacks the broad banded "Finger Smeared" category found in 1977.

As explained in Table 8-12, we view "types" 6, 7, 8, 9, 11, 29, 30, 32, and 41 as being highly interrelated and likely separate pieces of the "same vessels". Thus 2,119 sherds (69.98% of the total, 99.16% of the Brownwares), are probably variations on one theme which was well described by Knight (1981:21-36). This leaves only 18 sherds of previously undiscussed material in the 1987 assemblage from LA 1178.

Indented Corrugated Black-on-white is one of those uncommon common occurrences that crops up on a regularly irregular basis throughout the region. The example (one sherd) in this analysis is a medium-narrow banded indented corrugated on the exterior and a good Magdalena Black-on-white on the interior. Such vessels combine the two major decorated surface finishes of the times, but to what purpose remains a mystery.

A "new" occurrence in the 1987 assemblage is an incised plainware. In this particular case, the three sherds are more like Potsui'i Incised in layout and incision; executed, however, on a Magdalenan paste, and with no micaceous sparkles.

Although the three sherds of Magdalena Plain Corrugated 45° Incised are included in the "same vessels" set in terms of probable association, they are from a previously undiscussed variety of Magdalena Plain Corrugated. A small fingertip, or other smooth object, was dragged across wet plain corrugations, diagonally to form a pattern not visually unlike parallel rows of wide indented corrugations. This is not an unusual treatment, as a quick glance at Figure 69a in Rinaldo and Bluhm (1956:168) illustrates. It is a Magdalena correlate of Reserve Incised Corrugated.

The last "odd" sherd is one bowl body of a basketmarked exterior, plain interior, Magdalena paste and tempered vessel. Outside of the Largo-Gallina area of north-central New Mexico, these also fall into the common uncommon occurrence category.

8.5.2 Magdalena Utility Wares: Rims

Direct rims (with rounded lips) are the most frequent style in the utility wares at 42.93%, followed by mildly everted rims at 27.22% (Table 8-13). Everted rims appear to be predominantly plain ware, but this may also be a result of the line of incipient fracture along the plain-corrugated juncture. Such fractures would tend to under represent the decorated body type in this category because the corrugations would break off.

Table 8-12

FREQUENCIES OF MAGDALENA UTILITY WARES
(1987 vs. 1977 collections)

MAGDALENA TYPE	1987 ASSEMBLAGE		1977 ASSEMBLAGE	
6. Plain Body	1,674	55.28%	5,078	57.23%
7. Indented Corrugated	311	10.27%	1,014	11.43%
8. Plain Corrugated	63	2.08%	110	1.24%
9. Plain/Indented Corrugated	13	0.43%	136	1.53%
10. Finger Smeared	0		7	0.08%
11. Punched Corrugated	12	0.39%	11	0.12%
29. Corrugated-Plain Body Junction	20	0.66%	N/A	
30. High Polish "Brownwares"	20	0.66%	present under #6	
31. Indented Corrugated Black-on-white	1	0.03%	0	
32. Patterned Indented Corrugated	3	0.09%	present under #7	
39. Plain Body Incised	3	0.09%	0	
41. Plain Corrugated 45° Incised (Reserve)	3	0.09%	0	
42. Indented Corrugated Red Slip *	1	0.03%	0	
43. Red Slip Incised (Playa) *	3	0.09%	6	0.07%
44. Basketmark Utility	1	0.03%	0	
PERCENT OF TOTAL ASSEMBLAGE		70.22%		71.70%
* See Redwares earlier in section				

Table 8-13

MAGDALENA UTILITY WARE RIMS

TYPE	DIRECT		DIRECT THINNED		EVERTED		FILLET		STRONG EVERT		DIRECT BEVELLED		TOTALS	
JARS														
6. Plain Utility	25	22.12%	5	4.42%	36	31.86%	0		9	7.96%	1	0.88%	76	67.26%
7. Indented Corrugated	9	7.96%	0		5	4.42%	3	2.65%	10	8.85%	0		27	23.89%
8. Plain Corrugated	1	0.88%	1	0.88%	1	0.88%	0		2	1.77%	0		5	4.24%
9. Plain/Indented Corrugated	0		0		0		0		1	0.88%	0		1	0.88%
11. Punched Corrugated	2	1.77%	1	0.88%	0		0		1	0.88%	0		4	3.54%
TOTALS	37	23.89%	7	6.19%	42	37.17%	3	2.65%	23	20.35%	1	0.88%	113	100.00%
LUMPED DATA (ROW %) JARS														
6. Plain Utility	25	32.89%	5	6.58%	36	47.37%	0		9	11.84%	1	1.32%	76	100.00%
Others (Types 7, 8, 9, 11)	12	32.43%	2	5.41%	6	16.23%	3	8.11%	14	37.84%	0		37	100.00%
BOWLS														
6. Plain Utility	19	24.36%	5	6.41%	6	7.69%	0		0		1	1.28%	31	39.74%
7. Indented Corrugated	13	16.67%	0		3	3.85%	12	15.38%	0		0		29	37.18%
8. Plain Corrugated	10	12.82%	0		0		2	2.56%	0		0		12	15.38%
11. Punched Corrugated	1	1.28%	0		0		0		0		1	1.28%	2	2.56%
30. Magdalena "Alma"	0		0		1	1.28%	0		0		0		1	1.28%
32. Patterned Indented Corrugated	1	1.28%	0		0		0		0		0		1	1.28%
39. Plain Incised	1	1.28%	0		0		0		0		0		1	1.28%
44. Basketmark	0		1	1.28%	0		0		0		0		1	1.28%
TOTALS	45	57.69%	6	7.69%	10	12.82%	14	17.95%	0		3	3.85%	78	100.00%
LUMPED DATA (ROW %) BOWLS														
6. Plain Utility	19	61.29%	5	16.13%	6	19.35%	0		0		1	3.23%	31	100.00%
Other (7, 8, 11, 30, 32, 39, 44)	26	55.32%	1	2.13%	4	8.51%	14	29.79%	0		2	4.26%	47	100.00%

Table 8-13
(continued)
MAGDALENA UTILITY WARE RIMS

TYPE	DIRECT		DIRECT THINNED		EVERTED		FILLET		STRONG EVERT		DIRECT BEVELLED		TOTALS	
TOTAL UTILITY RIMS														
6. Plain Utility	44	23.04%	10	5.24%	42	21.98%	0		9	4.71%	2	1.05%	107	56.02%
Other (Types 7, 8, 11, 30, 32, 39, 44)	38	19.89%	3	1.57%	10	5.24%	17	8.90%	14	7.33%	2	1.05%	84	43.98%
TOTALS	82	42.93%	13	6.80%	52	27.22%	17	8.90%	23	12.04%	4	2.09%	191	100.00%
TOTAL UTILITY RIMS														
JAR	37	19.37%	7	3.66%	42	21.98%	3	1.57%	23	12.04%	1	0.52%	113	59.16%
BOWL	45	23.56%	6	3.14%	10	5.24%	14	7.33%	0		3	1.57%	88	46.07%
TOTALS	82	42.93%	13	6.80%	52	27.22%	17	8.90%	23	12.04%	4	2.09%	191	100.00%

There is a smattering of all other combinations except for two categories. Fillet rims were not found on plain surface sherds in this assemblage, because fillet rims are consistently associated with bands of corrugation immediately below the rim (see Tularosa Fillet Rim, Rinaldo and Bluhm 1956:36). Likewise, in the Reserve, New Mexico, to Alpine, Arizona, area, fillet rims are most associated with brown to red bowls with a few corrugated coils below the rim (Martin, et al. 1952; Rinaldo 1959). These have an otherwise untextured surface, although the body was occasionally painted (see Rinaldo and Bluhm 1956:173-181) and interiors were often smudged.

The second exception consists of vessels with a sharply flared rim (strong everted). These only occur on jars in this assemblage. They may be related to the rim forms of later El Paso wares ca. AD 1300, which have a more squared eversion than the gradual radius of the curving flared rims on Reserve-Tularosa brownwares.

Plain everted jar rims constitute a high percentage (21.98%) compared to plain everted bowl rims (5.24%). This is probably because the Magdalena brownware jars are generally textured on the shoulder of the vessel between the neck and the equator, away from the rim. Thus, again, we only can observe a fraction of the phenomena at the sherd level and report "plain rims" from corrugated vessels. The estimated mean rim diameters of Magdalena brownwares, lumped by type, range between 20.73 cm and 26 cm (see Table 8-14). Separated by vessel type (Table 8-15), jar and bowl rim diameter means remain in a range between 20 cm and 26 cm. Undoubtedly part of this observation results from the difficult arbitrary nature of the jar bowl dichotomy in analysis, but it also indicates that Magdalena Brownware jars are wide-mouthed. This is in good agreement with the Mogollon utility tradition of wide-mouth jars (Rinaldo and Bluhm 1956:162-165), and further reinforces the southern connection of the Magdalena ceramics. (See Tables 8-14 through 8-17 for all ware-type-rim summary statistics, and Figure 8-2 for actual distributional data.)

The Magdalena Brownwares from the 1987 excavation are in great agreement with the type definitions (Knight 1981) from the 1977 excavations. They are of a soft brown (buff gray-brown to black) paste; tempered with large quantities of quartz, feldspar, and angular gray to gray-pink rhyolite (also occasional multilithic sand, sherd, mica); and range from smooth-scraped to lumpy polished surfaces. Surface textures include almost all varieties of corrugations, patterns, and incisions in the pantheon of contemporary PIII/PIV ceramics. There appear no radical departures from Mogollon brownwares in general, and with the very minor but distinct changes in temper, Rinaldo and Bluhm's *Late Mogollon Pottery Types of the Reserve Area* could pass as the surface-treatment type descriptions of the utility wares from LA 1178. To identify Magdalena Brownwares, one should look for the angular rhyolite temper and an association with carbon painted whitewares. Without the distinct temper or carbon whiteware association, such a utility sherd is best defined as a Mogollon type.

Table 8-14

RIM DIAMETER BY TYPE

Type	Number	Mean	Std Dev	Minimum	Maximum	Sem
1	94	19.30	4.51	10.00	28.00	0.47
3	2	19.00	7.07	14.00	24.00	5.00
4	1	20.00	0.00	20.00	20.00	0.00
5	7	16.86	5.87	10.00	26.00	2.22
6	93	20.73	5.28	8.00	30.00	0.55
7	51	22.20	4.14	12.00	30.00	0.58
8	18	21.78	3.75	12.00	28.00	0.88
9	1	22.00	0.00	22.00	22.00	0.00
11	8	18.25	5.39	12.00	26.00	1.91
12	1	12.00	0.00	12.00	12.00	0.00
13	2	23.00	4.24	20.00	26.00	3.00
14	1	8.00	0.00	8.00	8.00	0.00
17	1	24.00	0.00	24.00	24.00	0.00
19	1	18.00	0.00	18.00	18.00	0.00
21	1	26.00	0.00	26.00	26.00	0.00
22	1	24.00	0.00	24.00	24.00	0.00
26	1	26.00	0.00	26.00	26.00	0.00
30	1	24.00	0.00	24.00	24.00	0.00
32	1	26.00	0.00	26.00	26.00	0.00
38	1	20.00	0.00	20.00	20.00	0.00
39	1	16.00	0.00	16.00	16.00	0.00
44	1	18.00	0.00	18.00	18.00	0.00
46	2	26.00	2.83	24.00	28.00	2.00

Table 8-15

RIM DIAMETER STATISTICS BY TYPE AND VESSEL FORM

Type	Form	Number	Mean	Std Dev	Minimum	Maximum	Sem
1	1	88	19.55	4.27	10.00	28.00	0.46
1	2	5	16.80	6.72	10.00	24.00	3.01
1	5	1	10.00	0.00	10.00	10.00	0.00
3	1	2	19.00	7.07	14.00	24.00	5.00
4	1	1	20.00	0.00	20.00	20.00	0.00
5	1	4	21.00	3.83	18.00	26.00	1.91
5	2	3	11.33	1.15	10.00	12.00	0.67
6	0	1	20.00	0.00	20.00	20.00	0.00
6	1	28	20.93	5.75	8.00	28.00	1.09
6	2	63	20.79	5.07	10.00	30.00	0.64
6	3	1	4.00	0.00	4.00	4.00	0.00
6	4	1	12.00	0.00	12.00	12.00	0.00
7	1	27	22.44	4.16	12.00	30.00	0.80
7	2	24	21.92	4.19	12.00	28.00	0.86
8	0	1	20.00	0.00	20.00	20.00	0.00
8	1	12	21.33	4.21	12.00	28.00	1.21
8	2	5	23.20	2.68	20.00	26.00	1.20
9	2	1	22.00	0.00	22.00	22.00	0.00
11	0	1	26.00	0.00	26.00	26.00	0.00
11	1	2	16.00	2.83	14.00	18.00	2.00
11	2	5	17.60	5.55	12.00	26.00	2.48
12	1	1	12.00	0.00	12.00	12.00	0.00
13	1	2	23.00	4.24	20.00	26.00	3.00
14	1	1	8.00	0.00	8.00	8.00	0.00
17	1	1	24.00	0.00	24.00	24.00	0.00
19	1	1	18.00	0.00	18.00	18.00	0.00
21	1	1	26.00	0.00	26.00	26.00	0.00
22	2	1	24.00	0.00	24.00	24.00	0.00
26	1	1	26.00	0.00	26.00	26.00	0.00
30	1	1	24.00	0.00	24.00	24.00	0.00
32	1	1	26.00	0.00	26.00	26.00	0.00
38	1	1	20.00	0.00	20.00	20.00	0.00
39	1	1	16.00	0.00	16.00	16.00	0.00
44	1	1	18.00	0.00	18.00	18.00	0.00
46	1	2	26.00	2.83	24.00	28.00	2.00

Table 8-16

RIM DIAMETER STATISTICS BY WARE AND VESSEL FORM FOR COMMON WARES

Ware	Form	Number	Mean	Std Dev	Minimum	Maximum	Std Error of Mean
MWW	Bowl	92	19.61	4.25	10	28	0.44
MWW	Jar	8	14.75	5.85	10	24	2.07
MRW	Bowl	3	19.33	5.03	14	24	2.91
MUW	Unknown	1	20.00	-	-	-	-
MUW	Bowl	73	21.42	4.87	8	30	0.57
MUW	Jar	98	21.04	4.82	10	30	0.49
WhMtRW	Bowl	4	16.50	8.06	8	26	4.03

Table 8-17

GALLINAS SPRINGS CERAMIC RIM ANALYSIS DETAILED SUMMARY STATISTICS: TOTAL COLLECTION OF MEASURED RIMS

Number	291
Mean	20.447
Median	20.000
Minimum	8.000
Maximum	30.000
Missing	0.000
Standard Deviation	4.900
S.E.M.	0.287
Sum	5950.000
Variance	24.007
Tukey five number summary (0,25,50,75 and 100th percentile) (8, 18, 20, 24, 30)	

Figure 8-2

COUNTS BY RIM DIAMETER BY VESSEL TYPE

VT = Vessel Type; RD = Rim Diameter

```
 THE FOLLOWING RESULTS ARE FOR TYPE 0 (unclassified):
       VT
               -+---------+---------+---------+---------+---------+---------+-
   Bowl    1.0 +                         1                                   +
               -+---------+---------+---------+---------+---------+---------+-
                0        10        20        30        40        50        60
                                       rim diameter in cm

 THE FOLLOWING RESULTS ARE FOR TYPE 1 (Magdalena Black-on-white)
       VT
               -+--------------+--------------+--------------+--------------+-
   Ladle     5 +1                                                            +
   Jar       2 +1     1     1                               2                +
   Bowl      1 +1     7     8     5    20    13    10      16     7     1    +
               -+--------------+--------------+--------------+--------------+-
                10             15             20             25             30
                                       rim diameter in cm

 THE FOLLOWING RESULTS ARE FOR TYPE 3 (Magdalena Black-on-red)
       VT
               -+-----------+-----------+-----------+-----------+-----------+-
   Bowl    1.0 +1                                                          1+
               -+-----------+-----------+-----------+-----------+-----------+-
                14          16          18          20          22          24
                                       rim diameter in cm

 THE FOLLOWING RESULTS ARE FOR TYPE 4 (Magdalena Polychrome)
       VT
               -+--------------+--------------+--------------+--------------+-
   Bowl    1.0 +                              1                              +
               -+--------------+--------------+--------------+--------------+-
                0              10             20             30             40
                                       rim diameter in cm

 THE FOLLOWING RESULTS ARE FOR TYPE 5 (Magdalena Whiteware)
       VT
               -+--------------+--------------+--------------+--------------+-
   Jar     2.0 +1      2                                                     +
   Bowl    1.0 +                        2           1           1            +
               -+--------------+--------------+--------------+--------------+-
                10             15             20             25             30
                                       rim diameter in cm
```

Figure 8-2 (continued)

COUNTS BY RIM DIAMETER BY VESSEL TYPE

```
THE FOLLOWING RESULTS ARE FOR TYPE 6 (Magdalena Plain Utility)
      VT
                 -+---------------+---------------+---------------+---------------+-
  Seed jar  4 +                  1                                                 +
  Jar       2*+               3  3  5  5  8  4 12 10 13  3  2                      +
  Bowl      1 +            1  1  2  1  1  3  4  2  4  6  3                         +
  Not typed 0 +                              1                                     +
                 -+---------------+---------------+---------------+---------------+-
                  0              10              20              30              40
                                           rim diameter in cm
                                 NOTE: Odd values rounded up to next even for clarity


 THE FOLLOWING RESULTS ARE FOR TYPE 7 (Magdalena Indented Corrugated)
       VT
                 -+---------------+---------------+---------------+---------------+-
   Jar     2.0 +      1     1           2     7     4     2     4     3     +
   Bowl    1.0 +      1     1     1     2     3     4     8     5     1     1+
                 -+---------------+---------------+---------------+---------------+-
                 10              15              20              25              30
                                           rim diameter in cm

 THE FOLLOWING RESULTS ARE FOR TYPE 8 (Magdalena Plain Corrugated)
       VT
                 -+---------------+---------------+---------------+---------------+-
Jar         2.0 +                             1     2           2           +
Bowl        1.0 +      1                      7           1     2     1     +
Not typed   0.0 +                             1                             +
                 -+---------------+---------------+---------------+---------------+-
                 10              15              20              25              30
                                           rim diameter in cm

 THE FOLLOWING RESULTS ARE FOR TYPE 9 (Magdalena Plain/Indented Corrugated)
       VT
                 -+------------+------------+------------+------------+------------+-
   Jar       2 +                          1                                      +
                 -+------------+------------+------------+------------+------------+-
                  0           10           20           30           40           50
                                           rim diameter in cm

 THE FOLLOWING RESULTS ARE FOR TYPE 11 (Magdalena Punched Corrugated)
       VT
                 -+---------------+---------------+---------------+---------------+-
Jar         2.0 +      1     1     1           1                 1           +
Bowl        1.0 +            1           1                                   +
Not typed   0.0 +                                                1           +
                 -+---------------+---------------+---------------+---------------+-
                 10              15              20              25              30
                                           rim diameter in cm
```

Figure 8-2 (continued)

COUNTS BY RIM DIAMETER BY VESSEL TYPE

```
THE FOLLOWING RESULTS ARE FOR TYPE 12 (White Mountain Redware)
       VT
                 -+-----------+-----------+-----------+-----------+-----------+-
   Bowl    1.0 +                            1                                  +
                 -+-----------+-----------+-----------+-----------+-----------+-
                  0           5          10          15          20          25
                                       rim diameter in cm

THE FOLLOWING RESULTS ARE FOR TYPE 13 (St. John's Polychrome)
       VT
                 -+---------+---------+---------+---------+---------+---------+-
   Bowl    1.0 +1                                                            1+
                 -+---------+---------+---------+---------+---------+---------+-
                 20        21        22        23        24        25        26
                                       rim diameter in cm

THE FOLLOWING RESULTS ARE FOR TYPE 14 (St. John's Black-on-red)
       VT
                 -+--------------+--------------+--------------+--------------+-
   Bowl    1.0 +                        1                                      +
                 -+--------------+--------------+--------------+--------------+-
                  0              5             10             15             20
                                       rim diameter in cm

THE FOLLOWING RESULTS ARE FOR TYPE 17 (Socorro Black-on-white)
       VT
                 -+-----------+-----------+-----------+-----------+-----------+-
   Bowl    1.0 +                            1                                  +
                 -+-----------+-----------+-----------+-----------+-----------+-
                  0          10          20          30          40          50
                                       rim diameter in cm

THE FOLLOWING RESULTS ARE FOR TYPE 19 (Casa Colorado Black-on-white)
       VT
                 -+--------------+--------------+--------------+--------------+-
   Bowl    1.0 +                          1                                    +
                 -+--------------+--------------+--------------+--------------+-
                  0             10             20             30             40
                                       rim diameter in cm

THE FOLLOWING RESULTS ARE FOR TYPE 21 (Tularosa Black-on-white)
       VT
                 -+---------+---------+---------+---------+---------+---------+-
   Bowl    1.0 +                          1                                    +
                 -+---------+---------+---------+---------+---------+---------+-
                  0        10        20        30        40        50        60
                                       rim diameter in cm
```

Figure 8-2 (continued)

COUNTS BY RIM DIAMETER BY VESSEL TYPE

```
THE FOLLOWING RESULTS ARE FOR TYPE 22 (Cibola Corrugated)
     VT
            -+-----------+-----------+-----------+-----------+-----------+-
  Jar      2 +                          1                                 +
            -+-----------+-----------+-----------+-----------+-----------+-
             0          10          20          30          40          50
                                     rim diameter in cm
```

```
THE FOLLOWING RESULTS ARE FOR TYPE 26 (Los Lunas Smudged)
     VT
            -+---------+---------+---------+---------+---------+---------+-
  Bowl   1.0 +                       1                                    +
            -+---------+---------+---------+---------+---------+---------+-
             0        10        20        30        40        50        60
                                     rim diameter in cm
```

```
THE FOLLOWING RESULTS ARE FOR TYPE 30 (Magdalena "Alma")
     VT
            -+-----------+-----------+-----------+-----------+-----------+-
  Bowl   1.0 +                          1                                 +
            -+-----------+-----------+-----------+-----------+-----------+-
             0          10          20          30          40          50
                                     rim diameter in cm
```

```
THE FOLLOWING RESULTS ARE FOR TYPE 32 (Magdalena Patterned Indented Corrugated)
     VT
            -+---------+---------+---------+---------+---------+---------+-
  Bowl   1.0 +                       1                                    +
            -+---------+---------+---------+---------+---------+---------+-
             0        10        20        30        40        50        60
                                     rim diameter in cm
```

```
THE FOLLOWING RESULTS ARE FOR TYPE 38 (Reserve Punched Corrugated)
     VT
            -+---------------+---------------+---------------+---------------+-
  Bowl   1.0 +                                1                               +
            -+---------------+---------------+---------------+---------------+-
             0              10              20              30              40
                                     rim diameter in cm
```

```
THE FOLLOWING RESULTS ARE FOR TYPE 39 (Magdalena Plain Incised)
     VT
            -+---------------+---------------+---------------+---------------+-
  Bowl   1.0 +                         1                                      +
            -+---------------+---------------+---------------+---------------+-
             0              10              20              30              40
                                     rim diameter in cm
```

Figure 8-2 (continued)

COUNTS BY RIM DIAMETER BY VESSEL TYPE

THE FOLLOWING RESULTS ARE FOR TYPE 44 (Magdalena Basketmarked)

```
      VT
              -+--------------+--------------+--------------+--------------+-
  Bowl   1.0  +                          1                                   +
              -+--------------+--------------+--------------+--------------+-
               0             10             20             30             40
                                      rim diameter in cm
```

THE FOLLOWING RESULTS ARE FOR TYPE 46 (Arenal Glaze Polychrome)

```
      VT
              -+--------------+--------------+--------------+--------------+-
  Bowl   1.0  +1                                                            1+
              -+--------------+--------------+--------------+--------------+-
              24             25             26             27             28
                                      rim diameter in cm
```

THE FOLLOWING RESULTS ARE FOR TYPE 47 (Pinedale/Heshotauthla Polychrome)

```
      VT
              -+---------+---------+---------+---------+---------+---------+-
  Bowl   1.0  +                         1                                    +
              -+---------+---------+---------+---------+---------+---------+-
               0        10        20        30        40        50        60
                                      rim diameter in cm
```

8.6 GENERAL RESULTS - INTRUSIVES

There are 31 types or ware-classes or 210 sherds, in total, of pottery from non-Magdalena sources in the 1987 assemblage. Except for 127 sherds of El Paso (40 Polychrome, 87 body) the 1987 intrusives are quite in accord with the 1977 intrusives (Table 8-18).

As with the 1977 assemblage, these few intrusives gap or overlap (in estimated date ranges) indicating a mean assemblage date immediately prior to AD 1300 (Figure 8-3).

8.7 TOBACCO PIPES FROM LA 1178 (Jack B. Bertram)

A total of four partial ceramic smoking pipes, all from Trenches 9, 10, or the nearby Test Trench 18, were recovered in the 1987 FS/CGI excavations. A possible fifth pipe of bone is described with the other worked bone items. These items were neither washed nor cleaned; they retain the internal fill soil present when they were excavated. They were submitted to the project ethnobotanical/palynological consultant for examination, but he declined to analyze them. His view (Holloway, personal communication, 1990) was that techniques for the study of local *Solanum*, *Nicotiana*, and other possible smoking materials were currently evolving rapidly and that these specimens should be retained in an undamaged condition as future research resources.

The four ceramic pipes were examined by Gomolak, who judged that all appeared to be made of typical Magdalena Utility Ware; he cautioned that this assessment could not be made with full confidence unless the pieces were freshly broken, which was not done at the request of the author.

One pipe was recovered from Trench 9, Unit 3, Level 8 (Poolset 36; FS 382). This item (Photos 8-1b, 8-2a) is a massive, molded ovoid-cylindrical solid pottery pipestem 22 mm wide at the broken end and 55 mm long. There is a molded (straw?) smoking bore 3 mm in diameter running through the axis of the piece. The exterior is smoothed overall and is polished to a moderate gloss in a small flat area near the break. This piece may have been the stem of either a conical ("cloudblower") pipe or of an elbow pipe; its shape and diameter at the break are close to those of the elbow pipe/platform pipe (FS 834) described below.

Two pipes were recovered from Trench 10. The first, from Unit 2 Level 1 (Poolset 81; FS 825), is the bowl of a simple elbow pipe (Photos 8-1c, 8-2c). The bowl is oval (14 mm and 16 mm exterior extreme diameters) with a tobacco bore (8 mm and 9 mm interior extreme diameters) extending to the full depth of the bowl, which is 32 mm long. The stem is broken away just past the elbow flexure. The stem and bowl join at an angle of 65°. The stem bore was apparently produced by molding in a twig or leaf of cattail, yucca, or some other grass-like plant with large leaves having an oval cross section. The leaf probably burned away in firing. The pipe bowl interior is smudged from use, and the bowl rim is blackened.

Table 8-18

LOCAL AND INTRUSIVE WARES AT LA 1178
(Data from the 1977 and 1987 excavations)

TYPE	1977		1987	
LOCAL TYPES				
Magdalena Wares	8,562	96.49%	2,809	92.78%
WHITE MOUNTAIN REDWARES, WESTERN AND CIBOLA TYPES				
White Mountain Redware	117	1.32%	16	0.53%
St. John's Polychrome	95	1.07%	4	0.13%
St. John's Black-on-red	20	0.23%	1	0.03%
Wingate Polychrome	1	0.01%	0	
Wingate Black-on-red	3	0.03%	1	0.03%
Cibola Indented Corrugated	12	0.14%	7	0.23%
Cibola Whiteware Undifferentiated	0		3	0.09%
Pinedale Polychrome	0		1	0.03%
Pinedale-Heshotauthla?	0		1	0.03%
Pinnawa?	0		1	0.03%
WESTERN WARE TOTAL	248	2.79%	35	1.16%
RIO GRANDE, ACOMA, AND VICINITY				
Socorro Black-on-white	37	0.42%	10	0.33%
Chupadera Black-on-white	5	0.06%	2	0.07%
Casa Colorado Black-on-white	1	0.01	4	0.13%
Elmendorf Black-on-white	0		3	0.09%
Los Lunas Smudged	3	0.03%	3	0.09%
Pitoche Corrugated	0		1	0.03%
Undifferentiated Rio Abajo Whiteware	0		5	0.17%
Rio Grande Incised (Potsui'i?)	0		1	0.03%
Cebolleta? Black-on-white	0		1	0.03%
Arenal Glaze Polychrome	0		3	0.09%
TOTAL	46	0.52%	33	1.09%

Table 8-18
(continued)
LOCAL AND INTRUSIVE WARES AT LA 1178
(Data from the 1977 and 1987 excavations)

TYPE	1977		1987	
NORTHERN MOGOLLON				
Reserve Black-on-white	2	0.02%	1	0.03%
Tularosa Black-on-white	8	0.09%	11	0.36%
Reserve Indented Corrugated	4	0.05%	2	0.07%
Patterned Indented Corrugated	0		2	0.07%
Reserve Punched Corrugated	0		1	0.03%
Tularosa-Mimbres Black-on-white	0		1	0.03%
TOTAL	14	0.16%	18	0.59%
SOUTHERN MOGOLLON				
Jornada Bichrome	1	0.01%	4	0.13%
Jornada Plain	2	0.02%	1	0.03%
El Paso Polychrome	0		40	1.32%
El Paso Plain	0		87	2.87%
Playas Red Incised	0		2	0.07%
TOTAL	3	0.03%	134	4.43%
GRAND TOTALS	8,873	100.00%	3,028	100.00%

Figure 8-3

DATED POTTERY TYPES, AND THEIR APPROXIMATE TIME SPANS, OCCURRING AT LA 1178

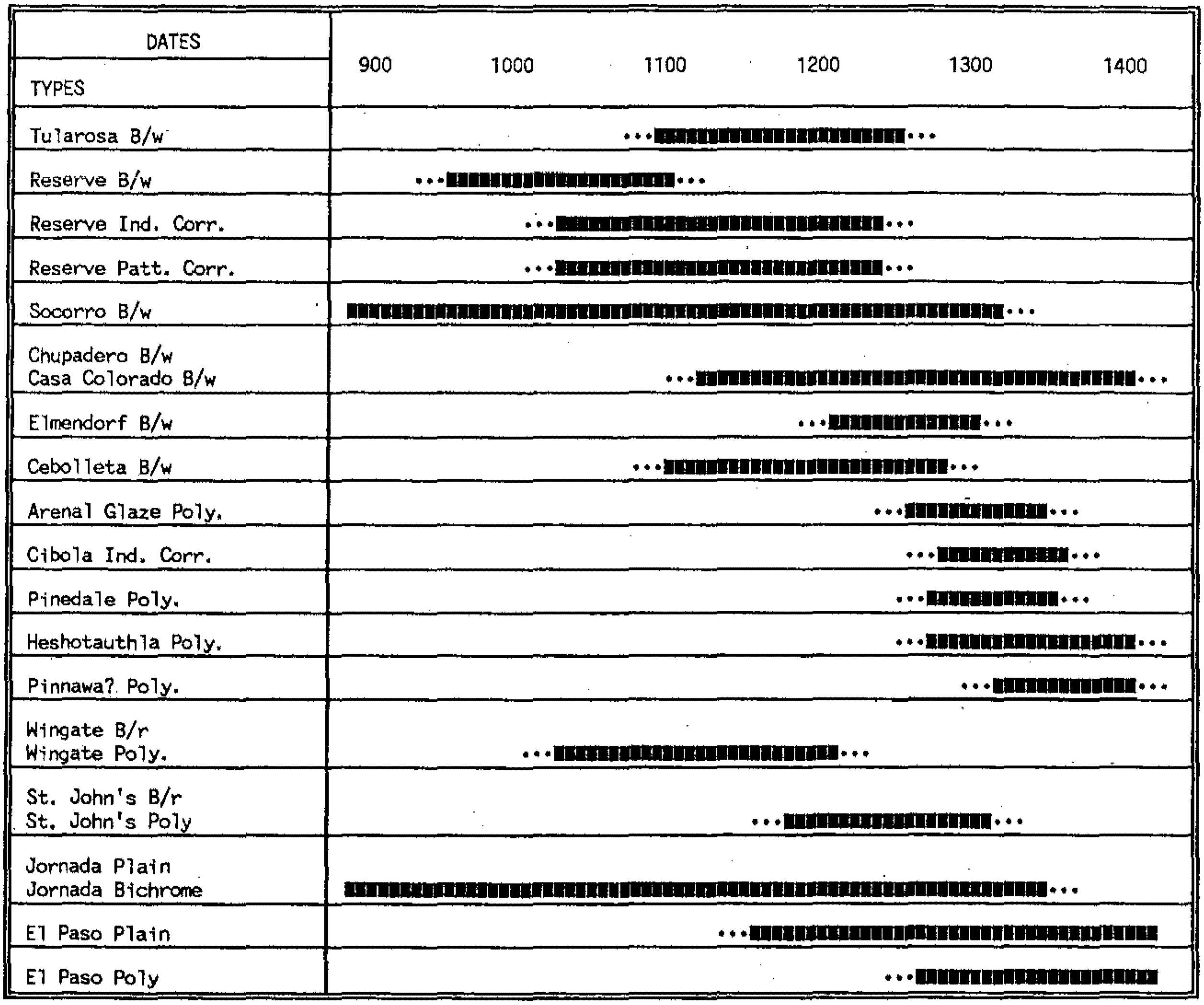
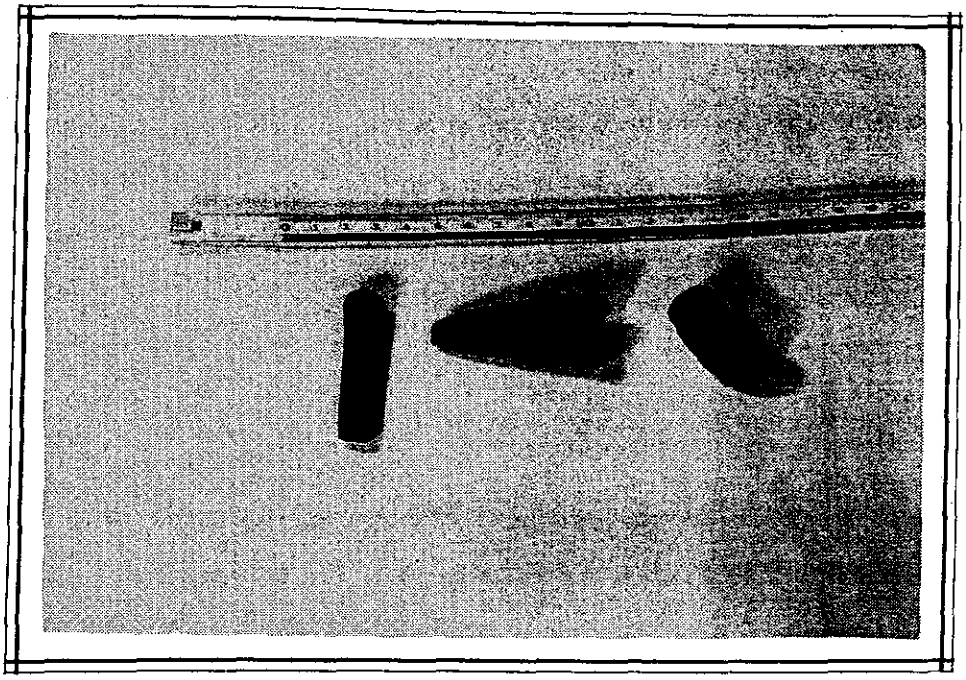


Photo 8-1



A B C

A: FS 347; Bone tube; possibly a pipe. B: FS 382; Brownware pipe stem.
C: FS 825; Brownware, elbow pipe bowl.

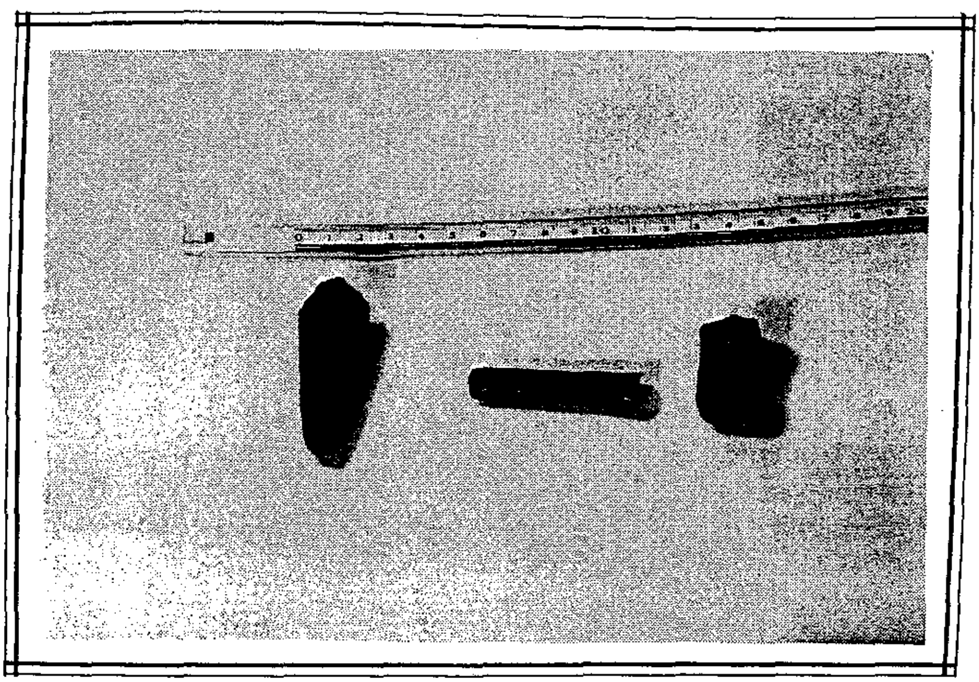
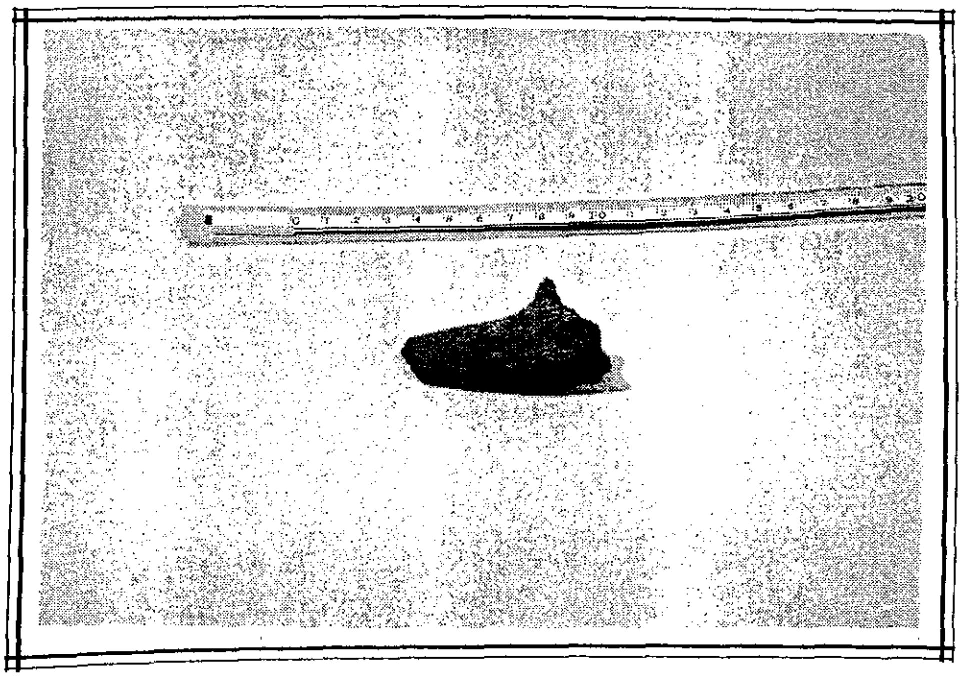
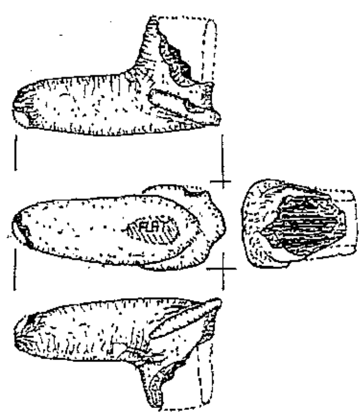


Photo 8-2

A: FS 382; Brownware pipe stem. B: FS 347; Bone tube; possibly a pipe.
C: FS 825; Brownware, elbow pipe bowl

Photo 8-3.





FS 834; Brownware elbow pipe with flange platform.

The second pipe from Trench 10 (Photo 8-3) was found in Unit 2 Level 4 (Poolset 81; FS 834). It is an elbow pipe, complete less the mouthpiece and part of the bowl. The stem is thick, short, and cloudblower-like. From the outside of the elbow flexure to the mouthpiece, the stem is 67 mm long. In long section, it is oval-conical; in cross section, it is irregular and oval-rectangular, with a width at the bowl base of 22 mm. The bowl was about 25 mm in outside diameter, 15 mm in inside diameter, round to oval in outline. It was at least 25 mm deep. The bowl and stem meet at an unfilleted angle of 82°. Along the outside intersection of the bowl and stem, a triangular fillet 5 mm wide and 6 mm high was added as an applique or by pinching; its effect was to provide a rest for the pipe. The stem base under the bowl was flattened. The combination of flat base and fillet allowed the pipe to be rested without tipping and with the mouthpiece elevated 5 mm above the surface. The stem on this piece closely resembles that of FS 382, which also is flattened in the polished area. FS 382 may have been an elbow pipe like FS 834.

The fourth ceramic pipe was found in the Trench 18 shovel test (Level 2; FS 1526). It is the stem (2 pieces) of another elbow pipe, apparently of light and simple construction and probably resembling FS 825. The bowl is completely lost, and only minimal evidence of the elbow flexure remains. The reconstructed stem, measured from the damaged mouthpiece to the beginning of the interior elbow flexure, is 41 mm long. The stem is circular in cross section and is conical in long section. Its maximum diameter is 18 mm.

Although rarely discussed in the literature, elbow pipes are not unknown in Southwestern sites. They are fairly common in Gallina sites (Hibben 1949), where they often have legs or other base-stabilizing additions, as does FS 834. Elbow pipes are also reported from large Anasazi sites, including Pueblo Bonito (Judd 1954), Guadalupe Ruin (Pippen 1987), and Lowry Ruin (Martin and Plog 1973). Jennings (1968), Hibben (1949), and others have speculated that elbow pipes are evidence of "Mississippian or Plains Caddoan influence". This may be the case; however, elbow pipes may be merely rare but normally present components of Puebloan assemblages of both Anasazi and Mogollon variants, as Tichy (1945) argued in her review of the distribution of Southwestern elbow pipes.

Chapter 9

FAUNAL ANALYSIS

by Jack B. Bertram

9.1 INTRODUCTION

The faunal collections from the mitigation efforts of 1987 at LA 1178 were known to be large, based on approximate field counts (Bertram 1987b). Given the budgetary limitations imposed by contract and the research potential limitations imposed by the small excavations into incompletely understood deposits, it was felt that a two-stage assessment of the fauna, lithic materials, and ceramic artifacts was needed before reasoned allocation of intensive study effort could be made among these competing areas of enquiry. In the faunal study, the two stages were to be: 1) rough sort assessment of the entire collection, followed by, 2) detailed analysis of a portion of the collection. The nature and magnitude of the portion and the manner of its selection were to be determined by the research team's assessments of the relative research potential of the faunal, macrobotanical, ceramic, and lithic data bases. Assessments were to be made in light of the first phase findings for each subject area.

An initial scan analysis was carried out on all bone materials for the FS/CGI excavations at LA 1178. This first phase of the faunal study was directed toward determining the probable species composition and assessing the potential availability of faunal evidence for processing studies, climatic reconstruction assessments, and geomorphological evaluations.

The intent of this approach was that species composition data might allow the formation of hypotheses testable in the intensive analysis phase, and that bone preservation and modification data would be used to help structure priorities for selection of radiocarbon, dendrochronological, and botanical samples. Decisions on chronometric and paleobotanical sample submissions, as is usually the case, had to be made long before a full faunal study could be completed. Also, it was hoped that initial data from the ceramic, faunal, and lithic collections would allow the discovery of spatial patterns and the development of preliminary interpretations of the deposits that had been dug, thus permitting the selection of much smaller samples of bones, rocks, and sherds for full analysis (a practical necessity given budgetary constraints and the magnitude of the collections).

9.2 DESCRIPTIVE METHODS

The rough scan study procedure adopted for the first analysis phase of the faunal study included recording of provenience information and the sorting of all bone materials according to the author's impressions into probable taxonomic groups (e.g., cottontail, deer,

pronghorn, unidentifiable artiodactyl, unspecified large mammal, very large mammal, woodrat, human, identifiable passerine bird, elk/bison, etc.). Each sort group was counted, tallied for incidence of burning, and characterized as a group in terms of taphonomic preservation, artifactual modification, possible seasonal significance, and other observations. At the rough sort stage, no effort was made to verify taxonomic interpretations by comparison with voucher or reference specimens; rather, the author relied on his experience only. In anticipation of the comparative identification studies to be carried out in the detailed analysis phase, special attention was paid to the recognition and tallying of potentially identifiable items from both the common forms and from more exotic animals, so that the full range of species represented in the collections could be included in detailed voucher comparison work.

In both the initial and the detailed analyses, data were pooled for most purposes into Poolsets, which were defined stratigraphically (see Chapter 5 above for discussion). Only in certain cases, as for example in the detailed study of poolsets containing defined internal stratigraphy, were comparisons made between specimen sets within a single poolset.

Sampling of faunal sets for detailed study was influenced by poolset membership. For poolsets selected for detailed study, all contained items were fully analyzed. A few field specimen sets from other poolsets were also fully analyzed, this being done for one of two reasons: 1) because exotic or rare species were thought to be present, and this necessitated the examination of all fragments and reconsideration of all rough identifications from that collection, or 2) because special research questions (e.g., the suspected presence of fully identifiable voles, small or medium birds, humans, woodrats, or bison-elk-very large mammal materials) indicated that selected materials from that collection should be further studied. In all cases where less than a total sample of bones from a poolset were fully analyzed, that poolset was excluded from further statistical or distributional analysis.

In the detailed analysis, all sampled faunal remains were identified initially and often completely by comparison to the author's own personal collections. Difficult specimens, voles, and native birds were further compared to items held by the Southwest Museum of Biology, University of New Mexico. Identifications were made only to the degree of specificity clearly warranted by the material; consequently, many specimens are identified only to a size range (e.g., Medium Mammal) or to a higher taxon (e.g., Small Sciurid). Small mammals are those no larger than a cottontail rabbit. Medium mammals are those no larger than a wolf. Large mammals are those no larger than a typical mule deer buck or bighorn ram. Very large mammals known from the area would include only wapiti (American elk), cows, bison, larger bears, and unrecognized scraps of human long bones. Small birds are no larger than an American robin. Medium birds are those no larger than a bantam chicken. Large birds would include turkeys, eagles, geese, cranes, larger owls, and other larger forms.

More exact size assignments were used for the squirrels, new world mice, and passerine (perching) birds. Chipmunks, the smaller ground squirrels (*Spermophilus spilosoma*, *S. lateralis*, and *S. tridecemlineatus*), the antelope squirrels (*Ammospermophilus*), and very

small prairie dogs are small sciurids. Large sciurids would include only the marmot. More mature prairie dogs, Abert squirrels, and rock squirrels are medium sciurids. Small cricetids are the voles and vole-like rodents (*Microtus*, *Clethrionomys*, *Phenacomys*, and *Lagurus*), harvest mice (*Reithrodontomys*), white-footed mice (*Peromyscus*), and smaller grasshopper mice (*Onychomys*). Larger grasshopper mice, cotton rats, and young woodrats (*Neotoma*) are medium cricetids. Any cricetid the size of a small mature woodrat was assumed to be a woodrat or cotton rat. The only very large cricetid, the muskrat, is of course unambiguously recognizable. Smaller passerine birds are those no larger than a common house (English) sparrow. These small birds cannot, in general, be distinguished with any precision working only with skeletal materials.

Another form of incomplete identification was also used in the case of very similar forms. Where more than one or two very similar species were known or suspected to occur archaeologically or currently from the study area, an attempt was made to determine the exact species represented. This category would include the small sciurids, pocket gophers, woodrats, pocket mice (*Perognathus* spp.), white-footed mice, and cottontail rabbits (*Sylvilagus auduboni* and *S. nuttalli*), as well as the hundred or so small and medium passerine species that could occur locally. In few such cases are archaeological materials adequate to permit assignment to a species. Where assignment was less than certain, the modifier ref. (referred to) was used. Where assignment was quite uncertain, the modifier c. (comparable to) was used. In a few cases, assignment was not feasible, but the possible taxa represented were thought to be potentially informative. Rather than lump these into a higher taxonomic category, the author has normally chosen to identify some pieces by listing alternatives (e.g. *Sylvilagus/Lepus americanus* or "cottontail/snowshoe hare" to preserve the size data inherent in this identification) or, in less definite cases, to give the modifier s. (size of) for the item (eg. large bird ulna, *s. Meleagris*).

Where elements could be identified, their laterality, apparent age, size and/or fusion, and apparent pathology were recorded. Also noted where found were evidence of surface-exposure weathering, burning, roasting, etching by roots or gastric acids, gnawing by humans, carnivores, or rodents, and the complex of staining, mottling, and textural modification which can indicate the effects of cooking and/or digestion.

Minimum number of individuals (MNI) was not systematically determined at poolings greater than the individual field specimen unit for this study. In no case could the portion of a depositional unit sampled be determined with any confidence, and only rarely could the absolute depositional significance of an excavation unit be reliably assessed. In such cases, MNI estimates for strata, pooled levels, or trenches would be uninterpretable, deceptive, and probably inclined to overestimate the larger and more reduced forms grossly.

Where more than one individual of a given taxon was found within a single field specimen collection, this information was noted as a comment. Lacking such a comment in the data listing for a given FS number for a given species or genus, the reader may assume that the author judged only one individual of that taxon to be present. For less precise taxa (e.g., large mammal) diagnosed only from fragments, the reader may assume that the author considered any assessment of MNI to be speculative.

For the sake of completeness of documentation, some common faunal analysis variables were recorded in customary detail, although the present research design did not demand full recordation. This approach was taken because the author recognized that the present study sample amounted only to partial and poorly controlled samples from larger proveniences that will, eventually, be further explored. The lack of this "unnecessary" detail in faunal studies of previous work at LA 1178 and elsewhere has been a source of frustration. When taphonomic condition is not reported other than in generalities (e.g., "the assemblage was well-preserved"), one cannot assess the reliability of species composition estimates based on identified frequencies since some bones, species, and age-groups preserve better than do others (Binford and Bertram 1977). Consequently, in this study, full taphonomic data were recorded although it was expected that they would prove to be of little immediate value.

9.3 OBSERVATIONS FROM THE INITIAL ROUGH SORT STUDY

The rough sort study (Appendix H.1) proved to be informative, but it fell short of its intended goals as a result of the character of the collections themselves. These collections were found to have little taphonomic or seasonal analysis potential and to contain little data bearing on some issues (e.g., bison and elk hunting) that had been expected to be important aspects of the study. The collections did, however, include a remarkable range of unexpected forms, most of them medium-sized birds.

The FS/CGI bone assemblage was found to be rather redundant in terms of bone preservation; relatively little evidence of bone modification through surface exposure, soil processes, or colluvial movement was seen. In general, strata found to contain significant quantities of bone judged to be surface-exposure weathered or severely eroded were those already suspected on the basis of stratigraphic evidence to have lain exposed for some time prior to their burial: the surface of the upper rich midden in Trench 2 Unit 1 (Poolsets 113 and 114), the lowermost cultural stratum in Trench 4 (Poolset 14), the upper room fill and possibly the subfloor deposit in Trench 6 (Poolset 53 and perhaps 56), the subfloor deposit in Trench 7 (Poolset 64), the upper part of Strata 4 and 5 in Trench 9 (Poolset 37), and the slump strata in several trenches, especially Trench 10 (Poolset 81). No other evident taphonomic patterns were seen in the rough sort.

Burned bone was rare, as were bone items roasted in the course of processing or as a result of structural fires and/or trash burning, except in contexts otherwise known to be burned. Most of the specimens with high seasonality data potential (e.g., infant or foetal artiodactyls) were found to have come from slumped or redeposited loci, and, therefore, fell outside the appropriate range for detailed analysis sampling. Few seasonally sensitive materials were present in well-preserved and rapidly accumulated strata.

Few bone tools or ornaments were found. These were tabulated and set aside for study.

The faunal assemblage was found to be dominated by rabbits, hares, and the smaller artiodactyls (deer, bighorn, pronghorn). Distributional evidence suggested that the

dominant artiodactyls at LA 1178, deer and pronghorn, were differentially distributed across the study area, as perhaps were the rabbits and hares. Preservation was good enough to suggest that the unusually high frequencies of large mammal bones in these collections, relative to the usually much more abundant rabbits and hares, was indicative not of preservation bias but rather of a hunting system that successfully brought in large quantities of the more desirable big game species. This inference was strengthened by the atypically high frequency of edible larger mammal meat bones in unreduced condition. Perhaps hunting was good enough to allow the occasional discard of food scraps before all nutrition had been extracted from them. No evidence of contamination by later occupations (e.g., bones of domestic cattle, of horse/ass, of domestic sheep, or of goats) was found in the rough sort.

Even on the basis of rough-sort identifications, it was evident that bighorn sheep and elk were clearly uncommon, and that bison might be completely absent. Turkeys seemed to be much less abundant in the FS/CGI collections than had been the case in the field school sessions of the previous decade. In a parallel observation, eggshell was found to be most uncommon. Prairie dogs, typically ubiquitous in Pueblo III large sites, were almost completely absent from the collections, as were their skeletally similar relatives, the Abert squirrel and rock squirrel. Also almost absent were the larger and smaller kangaroo rat species usually so abundant as food scraps and as intrusive skeletons in other large Pueblo III sites.

Pocket gophers and smaller cricetid rodents were common only in a few proveniences, occurring both as intrusives and as culinary leavings, and suggesting that disturbance of most excavated deposits by rodents may have been less severe than had been feared. Few voles were found. This was a disappointment, as voles are generally considered to be the most sensitive of the climatic indicator forms to be found among the readily identifiable mammals in Puebloan middens. The much less readily identifiable (but paleoecologically just as valuable) white-footed and deer mice (supergenus *Peromyscus*) were also very rare. Of all the economic rodents, only woodrats were at all common. They appeared both as culinary refuse and as probable burrow deaths or scatological intrusives. Inasmuch as considerable variation in woodrat tooth form was noted, it was suspected that more than one species was represented. Inventorying the species of woodrats in the collection became as a consequence a focus of the subsequent detailed analysis.

Carnivores were present but very rare in the collections; forms appeared to include only bobcat, fox, and weasel. No bears, lions, badgers, skunks, wolves, dogs, or coyotes were definitely recognized in the rough sort. The apparent absence of dogs was another surprise, given the commonness of dogs in other Pueblo III sites and the apparent abundance of large game animal bones (and hence high potential value of dogs as hunters) in the collections. This pattern was not thought to be an artifact of sampling; little or no dog gnawing was seen in the collections, which seemed unusually rich in artiodactyl ribs, a resource usually consumed almost completely by the Anasazi and/or their dogs.

Only isolated examples of human remains were found, indicating that no burials had been excavated in 1987, even inadvertently. The three human items recognized in the rough sort

all seemed to bear evidence of post-mortem modification or damage, implying burial disturbance, mortuary ritual, or cannibalism. They also were set aside for further study.

Only one reptile bone was seen.

The collections were found to contain a surprising diversity of large and medium-sized birds other than turkey. Turkey was represented by both mature and juvenile individuals. Tentatively identified were dove, quail, more than one species of jay, raven, meadowlark, eagle (an identification later found to be a remarkable error), smaller passerines or picids, and a shorebird (also found to be an error). No parrots, waterfowl, or other large birds appeared to be represented in the collections, although fragmentary and occasionally cooked large bird bone was not uncommon.

Invertebrate remains were limited to occasional beetle legs and elytrum fragments, which appeared to be consistent with those of the locally common darkling beetles, and to quantities of termite or ant egg and faeces fragments. These last made up most of the dust that was all that remained of the few unburned roofing timbers found in the 1987 dig. No effort was made to study these insect specimens further. Although remains of native mollusks were expected, no local snails were found in the damp spring soils or supposed reservoir-associated deposits from these excavations. The identifiable imported/exotic shell assemblage was very small, considering the evident size and importance of this site. Only a *Conus* or *Oliva* bead, a mussel shell or *Haliotus* pendent, and a burned and crumbling fragment of what could have been a *Glycymeris* or *Haliotus* bracelet were found. The shell material was referred to K. J. Lord for study.

9.4 OBSERVATIONS FROM THE DETAILED ANALYSIS

Taxa recognized in this analysis (Table 9-1, which summarizes Appendix H.2) included large, medium, and small mammals, numerous birds, one reptile, and (probably) two or more exotic seashells. The most commonly identified forms were cottontail, jackrabbit, pronghorn, deer, and turkey.

Artiodactyls seem to have been by far the most productive meat source at LA 1178. A total of 292 refitted items were identified as artiodactyl or, more specifically, as pronghorn (*Antilocapra americana*: 69 to 78 items), deer (*Odocoileus*, probably *O. hemionus*: 29 to 37 items), bighorn (*Ovis canadensis*: 5 to 7 items), elk (*Cervus elaphus canadensis*: 4 to 8 items), or bison (*Bison bison*: 0 to 3 items). Of these, only bison was not certainly attested in these collections. An additional 609 items were classified as medium/large mammal (98), large mammal (505), or very large mammal (4). All or almost all of these probably were fragments of artiodactyl bone.

The numerical differences in counts for the various species of artiodactyls is so great that it almost certainly reflects real hunting practices or hunting success rates. Despite the montane setting of their home base, the Gallinas Springs Mogosazi got an important proportion of their meat from pronghorns, which were probably taken from the nearest

Table 9-1

TAXA AND COUNTS (NISP) PER TAXON FROM LA 1178; DETAILED AND SPECIAL ANALYSES

tm	Species or Lowest Taxon	#	tm	Species or Lowest Taxon	#	tm	Species or Lowest Taxon	#
	Homo sapiens	3		Peromyscus sp	1	c.	Meleagris	7
	Antiocapra/Odocoileus	1		Microtus sp	2		eggshell	3
	Antilocapra/Ovis	1		small cricetid	2		Buteo sp	1
	Antilocapra/americana	69		Neotoma	17		large bird	23
	Odocoileus/Antilocapra	1		Neotoma albigula	10		medium/large bird	3
	Odocoileus (presumably hemionus)	29		Neotoma ref mexicana	1		Zenaida macroura	1
	~Odocoileus?	2		Neotoma stephensi	2		Chordeiles (best as C. minor)	1
	cervid	3		medium rodent	7	c.	Colaptes aura	1
	Cervus elaphus canadensis	4		small rodent	1		Corvus corax	5
	Cervus/Bison	3		small/medium mammal	578	c.	Corvus corax	1
	Ovis canadensis	3		small mammal	34		Aphoelocoma	1
	Ovis ref canadens	2		Lepus sp (presumably L. californicus)	197	c.	Aphoelocoma	3
	artiodactyl	158	c.	Lepus	5	c.	Cyanocitta stelleri	1
c.	Antilocapra	5	s.	Lepus	2		jay?	2
c.	Antilocapra?	1		Sylvilagus audubonii	1	c.	Sturnella neglecta	3
c.	Odocoileus	5		Sylvilagus	672	c.	Xanthocephalus sp	1
c.	Ovis large	1	c.	Sylvilagus	6		Coccothraustes vespertinus (northeastern race?)	1
s.	Cervus elaphus canadensis	1		lagomorph	4	c.	Sialia	1
	large mammal	505		lagomorph?	1		medium passerine	2
	medium/large mammal	98		Mustela frenata	1		medium passerine?	1
	very large mammal	3		Felis (Lynx) rufus	3		small passerine	6
	very large mammal?	1		medium carnivore	1		medium bird	5
	Cynomys sp	2		medium carnivore?	1		small bird	1
	Sciurus aberti	1		vulpine (best as Vulpes fulva)	4		small form	1
	medium sciurid	2		medium mammal	5		colubrid snake	1
c.	Ammospermophilus	1		unknown mammal	1		unidentified	5
	Dipodomys c ordi	1		mammal	2		unknown	51
c.	Dipodomys small sp	2		lagomorph/bird	2		unknown small	2
	Thomomys sp	42		medium mammal/bird	4		not bone	4
c.	Thomomys (most best as T. bottae)	2		large bird?	25			
c.	Thomomys?	1		Callipepla (squamata?)	3			
	Onychomys ref leucogaster	2	c.	Callipeple	3			
c.	Onychomys	1		Meleagris gallopavo (all large race?)	17			

significant expanses of open and woodland border areas: the North Plains, San Agustin Plains, Rio Salado Valley, and La Jencia Basin areas, all of which are at least 10 - 15 km away. FAIRLY LARGE ANTELOPE HERD SPOTTED IN MEDLEY AREA ~ 7 MILES SE OF PUEBLO

Closer to home, deer were taken, with a kill rate perhaps one-third to one-half as high as that inferred for pronghorns. Allowing for the greater bulk of the local deer (almost all deer in this region are mule deer, weighing 45 to 145 kg on the hoof, rather than the much smaller Sonoran whitetail), the meat contribution by deer may have been almost as high as that by pronghorn, which weigh 30 to 65 kg on the hoof (Bailey 1931).

Archaeological studies have recently developed documentation that the Formative period western New Mexico pronghorn was larger than present pronghorns (cf. Bertram and Draper 1982; Bertram 1989b). The native race of pronghorn is now either extinct or else its gene pool has been swamped by introduction of the smaller Northern and Central Great Plains pronghorn. The inference of approximate parity in pronghorn and deer meat overall yields is unaffected by this size shift; deer also seem to have been substantially larger 800 to 1200 years ago than they are now.

No data now available allow the confident reconstruction of the AD 1200 - 1300 characteristics, range, and habits of the western New Mexico bighorn; however, in those days it certainly was not the reclusive mountain dweller of today. Early accounts and prehistoric petroglyph distributions (Bertram ms in prep) both indicate that the indigenous bighorn was a creature that sometimes occurred in large groups and that commonly ranged well out into grasslands ... a description equally applicable to the pre-gun era elk. Both species were essentially extirpated in this area by the beginning of the 20th century (Bailey, 1931). Neither species was commonly taken by the inhabitants of LA 1178. Given the disparity in the weights of the two forms, it seems safe to assert that bighorn did not provide an important source of meat for these people, but that elk meat may have been an important resource. A typical elk will average three to four times the weight of a typical mule deer or bighorn sheep.

Previous analyses of Gallinas Springs archaeofaunas (McGregor n.d.; O'Laughlin n.d.) have reported the presence of small quantities of bison bones in the site. The data from this project do not confirm this claim, but neither do they refute it. Several items were identified on size as being either elk or bison, but no definite bison material was found. If bison were taken regularly, they must have been taken on the eastern plains, although sporadic evidence from Chihuahua and southern New Mexico continues to appear suggesting that there was indeed one or more small bison populations present west of the Rio Grande during this period (Laumbach, personal communication, 1989), perhaps in the San Agustin Plains. Even if elk or bison were taken no more than a few kilometers from Gallinas Springs, the carcasses surely would have been intensively processed to reduce transport weight, so that relatively few bones of these forms would be expected in the pueblo's middens. Obviously, if bison were taken by Gallinas Springs folk on forays out to the Llano Estacado or into the Rio Pecos Valley, one would expect to find little osteological evidence of this at the pueblo, 250 km to the west of the known bison ranges.

Although lagomorphs (rabbits and hares) appear to have contributed less meat than did the artiodactyls at LA 1178, their input was not negligible. A total of 204 jackrabbit (*Lepus californicus*) elements, 679 cottontail (*Sylvilagus* sp., probably dominated by *S. auduboni*) elements, 5 undifferentiated lagomorph pieces, 578 small/medium mammal fragments, and 34 small mammal fragments were recovered from the FS/CGI mitigation. Most of the small/medium and many of the small mammal fragments probably come from lagomorphs. Working simply from meat yield ratios, these data would imply that jackrabbits (live weight typically of around 2 kg) and cottontails (live weight typically of about 0.9 kg) may each have yielded on the order of a fifth as much meat as did pronghorns.

For a more typical (i.e., San Juan Basin Anasazi or Rio Grande Piro) puebloan assemblage, the author would generally argue that even rough, order-of-magnitude computations (of the sort just presented) tend grossly to underestimate the contribution of smaller forms, because the bones of smaller forms preserve less well than do those of larger forms and are also far more likely to be eaten entirely by the humans at the site and by their commensal dogs and turkeys. In the case of the FS/CGI collections from LA 1178, however, the rarity of carnivore gnawing, the absence of dog bone [in contrast to McGregor's (n.d.) and O'Laughlin's (n.d.) studies], the paucity of turkeys, and the near-absence of eggshell all indicate that dogs and turkeys may have been only rarely or sporadically kept at the site. Moreover, bones that would routinely have been processed into bone meal for soup extraction in San Juan Basin sites, leaving only the dense shaft fragments to be recovered in excavation, were not uncommonly found in a little-reduced state at LA 1178. This indicates that routine crushing of bones (even of the more desirable artiodactyls) for human consumption was not a practice rigorously followed at this town.

Another indication of the relatively good access to animal protein enjoyed by the occupants of Gallinas Springs Pueblo is the remarkably low abundance of other smaller economic mammals at the site. Only one bone of Abert squirrel (*Sciurus aberti*), two bones of prairie dog (*Cynomys* sp., probably *C. gunnisoni*), and two bones referable to either of these forms or to rock squirrel (*Spermophilus variegatus*) were found. Even though the detailed analysis was biased toward the examination of all woodrat bones which could be speciated, only 30 woodrat (*Neotoma* spp., including *N. albigula*, *N. stephensi*, and probably *N. mexicani*) bones were identified; half of these were from proveniences not otherwise included in the detailed analysis sample. Only three bones of kangaroo rat, all of small forms (*Dipodomys ordi* and perhaps *D. merriami*) were found. Excluding the pocket gophers (see below) and the indeterminant small and small/medium mammals, all of the definite and potential rodent bones in the study sample totaled only 57 items. In addition to the forms already mentioned these included examples of small sciurid, probably antelope squirrel (*Ammospermophilus leucurus*), grasshopper mouse (*Onychomys* sp), white-footed mice (*Peromyscus* sp), vole (*Microtus* sp), and unidentifiable small rodent, small cricetid, and medium rodent.

Among the rodents, only pocket gophers (*Thomomys bottae* and, perhaps, *Thomomys talpoides*) were at all common (45 identified items). A substantial portion of these were intrusive burrow deaths, but some were probably introduced into the site deposits as culinary trash or faecal contents.

The rarity of rodent remains in this site is somewhat surprising; excavation techniques in many cases were adequate to recover more small and medium rodent bones, had they been present. One must conclude that few rodents were eaten. These data contrast strongly with Pueblo II and Pueblo III sites from northwestern New Mexico and southwestern Colorado, where prairie dogs, especially, are sometimes as common in culinary middens as are cottontails. The absence of prairie dogs may indicate that they were simply too small to be worth processing ... another indication of the protein prosperity of the Gallinas Springs people.

There is another possibility which should be considered in this instance. In studies of faunas from the Elena Gallegos land exchange Atrisco area sites and of the Pueblo I - III "AMREP Artificial Leg" villages north of Corrales (Bertram in press; Bertram in prep), the author has found that prairie dogs are rare but woodrats are very common. Unambiguous evidence of routine woodrat consumption was found in both studies. These studies are drawn from areas environmentally and altitudinally very similar to the presumed Gallinas Mountains foothill farming areas of the Gallinas Springs Mogosazi, that is, open alluvial bajadas and plains, sand dunes, and juniper scrub woodlands at elevations of 5000 to 6000 ft. These data may indicate either that prairie dogs were simply uncommon in the greater Middle Rio Grande/Rio Puerco/Rio Salado drainage basin in the Formative period, or that the people of this area, for whatever reason, did not choose to eat prairie dogs.

If the latter speculation is considered seriously, it may provide insight into farming practices. Consumed prairie dogs are fairly rare in San Juan Basin sites prior to Pueblo II times (author's own studies; Nancy Akins, personal communication, 1985). Akins and this author (Akins and Bertram, 1985) have speculated that this culinary shift indicates a movement in early Pueblo II times toward much more intensive close-crop agriculture, resulting in an eruption of prairie dog populations. Thereafter, the San Juan Basin Anasazi, like the late 19th century Zuni described by Bailey (1931), had to choose between eating prairie dogs or losing their crops to the pests. Perhaps the hypothesized agricultural shift did not ever occur universally east of the continental divide; if so, then farming practices of the inhabitants of LA 1178 and of their predecessors and neighbors to the north may have differed significantly from those characteristic of the San Juan Basin eastern Anasazi.

Few carnivore remains were found in the collections. Those found included parts from perhaps two bobcats (*Felis* [*Lynx*] *rufus*), a fox most comparable with red fox (*Vulpes fulva*), and a longtailed weasel (*Mustela nigipes*). Both the bobcats and the fox were represented in part by vertebrae; the bobcats came from Trenches 8 and 10 and the fox from Trench 8. Two other items were referable only to medium carnivore. Also found were a few pieces which could be referred only to medium mammal or, even less precisely, to medium mammal/large bird.

The most abundantly represented of the identified birds, all attested from several proveniences, were turkey (*Meleagris gallopavo*: 17 to 24 items), quail (*Callipepla* sp., perhaps including both scaled and Gambel's quail: 6 pieces), raven (*Corvus* ref. *corax*: 6 pieces), gray-breasted or scrub jay (*Aphoelocoma* sp.), and, probably, meadowlark (cf. *Sturnella*, most likely *S. neglecta*). Birds less-well represented included a mourning dove

(*Zenaida macroura*), a broad-winged hawk (*Buteo* sp.), a nighthawk or bullbat (*Chordeiles* sp.), a flicker (*Colaptes aura*), a probable yellow-headed blackbird (*Xanthocephalus xanthocephalus*), a Stellar's jay (*Cyanocitta stelleri*), a possible bluebird (ref *Sialia* sp.), and an evening grosbeck (*Coccothraustes vespertina*).

The carpometacarpus of the nighthawk was identified in the rough sort as being from a shorebird (Charadriiformes). The evening grosbeck was represented by an anterior mandible fragment which the author mistook in the rough sort for an eagle mandible fragment, because it was so remarkably massive (they are in fact surprisingly similar and are quite equal in size). This massiveness seems to indicate that the bird in question was of the northern and eastern race of *Coccothraustes*, rather than the more gracile-billed southwestern race now resident in western New Mexico. If the grosbeck was taken locally, it may indicate cooler and/or wetter conditions than now prevail in western New Mexico. If the somewhat insecure yellow-headed blackbird identification is correct, then either long-range import of birds or else the presence of cattail marshes near the pueblo is implied. Pollen from two species of cattails is reported from the site (Appendix A). The presence of other bird species imply no remarkable difference in the local environment from that prevailing today.

Of the birds recognized or tentatively identified in this study, all are large enough to be worth eating, and most (if the identifications are correct and if the birds were male) have exceptionally attractive feathers. Few other birds' feathers can duplicate the striking yellows, reds, golds, blues, and pinks obtainable from the blackbird, bluebird, flicker, jay species, and grosbeck. It seems, therefore, unlikely that the smaller birds are entirely intrusive. One would have expected at least a few drab species to be present unless cultural selection had operated. This appears to be confirmed by distribution of these forms across the site, and by the appearance of possible and definite thermal alteration on bones not only of turkeys and quail but also on jays, raven, flicker, perhaps the grosbeck, and unidentified small and large bird bone. A third of the total bird assemblage is of these smaller ornamental birds. Trenches 2, 10, and especially 5 were anomalously rich in ornamental birds. Trench 8's birds were one-third ornamental. Other trenches essentially lacked these birds.

The turkey assemblage may have included domestic birds, judging from the range of ages present; if so, all mature birds of determinant size were of the larger form indistinguishable from Merriam's wild turkey. Both sexes are present, as are a young chick and several 4-month poults (in Trenches 3 and 8 and perhaps, elsewhere, as well). This author has never analyzed an assemblage of this size which contained immature turkeys but which also contained so little eggshell, proportionately so few turkeys, and proportionately so many artiodactyls. Whatever was the subsistence base at Gallinas Springs Pueblo, it was clearly unlike that of Rio Grande pueblos or that of Anasazi sites from the San Juan Basin and San Juan Uplands (cf. Bertram 1989a,b). Elsewhere, turkeys are either very rare, or they are ubiquitous; they tend to occur at the expense of large mammals, for which they may have provided an economically acceptable substitute. It is not clear why the Gallinas Springs people would have kept turkeys at all. Perhaps the turkeys recovered in this project were after all mostly wild birds.

The only reptile bone recovered was a small thorassic vertebra of a colubrid snake. Several colubrid genera are locally present.

9.5 SPATIAL PATTERNS

Spatial patterns in faunal distributions were examined using the detailed analysis data base, with all those special samples drawn from otherwise unsampled poolsets removed. Only potentially economic and relatively abundant taxa were considered. Patterning was first addressed from the perspective of co-occurrence of taxa, viewed in terms of simple presence-absence relationships. To further explore patterning found in this initial study, analysis was then performed on actual counts of items per taxon; this allowed the detection of correlation patterns between abundances of different taxa as these varied between loci. Loci were also directly compared in terms of their relative abundances of taxa. These studies will now be described; all draw on the data listing of item counts by taxon for sampled poolsets presented in Table 9-2.

Simple co-occurrence trends between taxa were evaluated by counting each of the 39 poolsets as a case, regardless of its quantity of material from a given taxon. Each poolset was scored as "present" for a taxon if any elements at all from that poolset had been referred to that taxon. Co-occurrence trends between pairs of taxa were then examined using a simple chi-square test of association, set up as a two by two cell table. This procedure, of course, would tend to obscure second-order negative correlations between abundant taxa, and would tend also to produce apparently meaningful results for taxa pairs, one or both of which were too sparsely represented to allow valid comparison using this technique. In this case, the probability value associated with the chi-square statistic should be viewed only as a convenient metric of association, which takes on a value of zero if two taxa are perfectly associated and a value of one if two taxa are randomly distributed, one with the other.

The compared taxonomic groups and their abbreviation labels used in the tables were fifteen in number: pronghorn (ANTI), unspecified artiodactyls (ARTI), deer (ODOC), bighorn (OVIS), elk/bison (CER-BIS), turkey (MELE), cottontail (SYLV), jackrabbit (LEPU), small mammals (SMMAM), small/medium mammals (SMMDMA), medium/large mammals (MDLGMA), large mammals (LGMAM), very large mammals (VLM), large birds (LBIR), and lagomorph/large birds (LAGB). All 105 possible pairwise comparison tables for these taxa taken two at a time were generated (Appendix H.3). Most results indicated little or no tendency to associate, but a total of 15 comparisons indicated that possibly significant associations between them might exist; these are tabulated below (Table 9-3).

Examination of these p-values leads one to suspect that negative correlations are implied, not only by the one negative association found, but also by patterns in groups of association strengths. The best example of this is the group made up of pronghorn, jackrabbit, cottontail, and deer. Pronghorn is more closely associated with cottontail than is deer, while deer and jackrabbit are more closely associated than are any other pair of the study. Deer and pronghorn are less closely associated. The apparent strength of the association

Table 9-2

COUNTS (NISP) PER TAXON PER POOLSET PROVENIENCE FOR 39 SAMPLED PROVENIENCES AND 15 ECONOMIC TAXA

Poolset	Taxa [1]															
	ANTI	ODOC	OVIS	CER BIS	ARTI	LGM	MLM	MELE	LEP	SYLV	SM MEDM	LBRD	VLGM	SMM	LAB	TOT.
2	1	0	0	0	1	0	1	0	1	2	0	0	0	0	0	6
3	4	2	0	3	8	18	17	0	19	94	50	0	0	0	0	215
4	0	4	0	1	3	3	3	0	8	18	3	1	0	30	1	75
13	1	1	0	0	1	2	2	1	1	2	0	1	0	0	0	12
14	2	0	0	0	2	20	0	3	2	6	15	1	0	0	0	51
22	0	0	0	0	17	2	3	0	0	3	4	0	0	0	0	29
23	0	0	0	0	7	2	1	0	0	2	4	0	0	0	0	16
25	0	0	0	0	3	0	0	1	0	1	0	0	0	0	0	5
32	0	1	0	0	0	15	0	1	1	4	0	1	0	0	0	23
33	1	1	0	0	0	1	5	0	3	11	6	0	1	0	0	29
34	1	3	0	0	2	18	0	0	7	20	42	1	0	0	0	94
35	1	0	0	0	0	5	0	1	0	14	14	0	0	1	0	36
36	2	1	0	0	5	7	3	0	3	10	9	0	0	0	0	40
37	0	2	0	0	3	19	0	1	4	19	9	0	0	0	0	57
38	1	0	0	0	1	5	2	0	0	7	11	4	0	0	0	31
53	0	0	0	0	0	17	0	1	0	3	0	0	0	0	0	21
54	0	0	1	0	0	4	0	0	0	4	0	0	0	0	0	9
55	1	1	0	0	1	4	0	2	2	4	73	1	0	0	0	89
56	0	0	0	0	0	2	1	0	2	3	0	0	0	0	0	8
63	0	1	0	0	0	24	2	0	1	2	0	0	0	0	0	30
64	1	1	1	1	0	11	17	1	1	4	7	0	0	0	2	47

Table 9-2
(continued)

COUNTS (NISP) PER TAXON PER POOLSET PROVENIENCE FOR
39 SAMPLED PROVENIENCES AND 15 ECONOMIC TAXA

Poolset	Taxa [1/]														
	ANTI	ODOC	OVIS	CER BIS	ARTI	LGM	MLM	MELE	LEP	SYLV	SM MEDM	LBRD	VLGM	SMM	LAB	TOT.
73	3	1	1	0	10	7	13	1	1	3	3	8	0	0	0	51
74	4	0	0	0	1	16	0	1	2	6	26	0	0	0	0	56
75	2	1	0	0	2	14	7	3	7	18	41	0	0	0	1	96
76	3	2	0	0	18	23	4	0	15	16	28	0	0	1	0	110
77	0	0	0	0	1	7	0	0	0	2	0	1	0	0	1	12
78	1	0	0	0	0	3	0	0	0	1	3	1	1	0	0	10
82	5	1	1	1	11	14	2	1	4	15	15	2	1	0	0	73
92	0	0	0	0	1	4	3	0	0	0	0	0	0	0	0	8
93	3	0	0	1	2	3	0	0	1	3	0	0	0	0	0	13
102	0	3	0	0	2	3	0	0	3	3	0	0	0	0	0	14
103	0	0	0	0	0	1	0	0	1	0	3	0	0	0	0	5
112	0	0	0	0	1	2	0	0	6	2	3	0	0	0	0	14
113	6	1	0	0	5	51	2	0	16	53	18	1	0	0	1	154
114	1	2	0	1	9	37	0	0	32	116	77	0	0	0	0	275
115	12	2	0	0	13	31	0	0	14	40	26	0	0	0	1	139
116	0	0	0	0	1	3	1	0	0	0	0	0	0	0	0	5
117	7	0	0	0	6	19	0	0	8	17	15	0	0	0	0	72
119	5	5	0	0	14	62	0	1	35	142	70	1	0	0	0	335

[1/] Abbreviations as given on page 9-12.

TABLE 9-3

POTENTIALLY SIGNIFICANT PRESENCE-ABSENCE COMPARISONS AND ASSOCIATED SIMPLE CHI-SQUARE P-VALUES, FOR LA 1178 FAUNAL POOLSET [1/]

First Taxon versus Second Taxon		p value	Association Character
ANTI	ODOC	.037	POSITIVE
ANTI	SMMAM	.001	POSITIVE
ANTI	LEPU	.012	POSITIVE
ANTI	SYLV	.031	POSITIVE
ARTI	VLM	.091	NEGATIVE
CER-BIS	LEPU	.096	POSITIVE
SMMAM	LEPU	.079	POSITIVE
LGMAM	SMMAM	.041	POSITIVE
ODOC	SYLV	.065	POSITIVE
ODOC	LEPU	.000	POSITIVE
ODOC	SMMAM	.071	POSITIVE
ODOC	LAGB	.088	POSITIVE
OVIS	CER-BIS	.043	POSITIVE
OVIS	MELE	.086	POSITIVE
MELE	LBIR	.099	POSITIVE

1/ Abstracted for convenient reference from Appendix H.3

in this last case might well be an effect of the very strong association both artiodactyls enjoy with jackrabbits and cottontails.

Other potentially strong associations are provocative as well. Bighorn does not associate strongly with any taxa other than turkeys and elk/bison. Turkey otherwise associates strongly only with large birds. Elk/bison associates strongly otherwise only with jackrabbits. The expected associations between identifiable and unidentifiable taxa (jackrabbit with small/medium mammal, cottontail with small mammal, artiodactyl with large mammal, elk/bison with very large mammal, turkey with large bird and/or lag/bird) only rarely seem to have been strong. These patterns were suspected to imply spatial variation in the composition of discard faunas relating to fragmentation and recognizability and to co-hunting, that is, hunting two co-resident species in the same foray. Since cottontails are most common in deer habitat and jackrabbits in pronghorn habitat, one might reasonably hypothesize that these pairs of taxa would tend to be taken in the same foray and be disposed of in the same location after consumption, whereas jackrabbits would not be expected to co-occur most often with deer under this hypothesis. Note that the data as presented appear to contradict the co-hunting hypothesis in this, its simplest form. Further exploration of these patterns required consideration of the degree of covariation between taxa, and thus entailed the use of actual counts rather than of presence-absence measures.

Actual counts for each of the 15 economic taxa for each of the 39 sampled analytical units were then examined by calculating their Pearson correlation coefficients (Table 9-4). Examination of these revealed that, across the 39 sample poolset loci, pronounced variation in co-occurrence of taxa were present.

The most salient high correlations found were: 1) between cottontails, jackrabbits and small/medium mammals; 2) between cottontails, jackrabbits, and large mammals; and 3) between jackrabbits, deer, and perhaps artiodactyls. The implied correlations between deer, large mammals, and small/medium mammals were substantially smaller, indicating that several independent processes might have operated to produce the mix of species-abundances seen. Some correlations were even negative; the strongest such pattern was a negative correlation trend in abundance of bighorn versus cottontail, jackrabbit, and large mammals.

A principal components analysis with variance maximizing orthogonal (Harman 1966) rotation was carried out on this correlation matrix (Table 9-5). Of the 15 factors theoretically possible, the author expected at least seven potentially meaningful factors to be extracted, on the grounds that at least seven recognizably distinct taxa were present in the assemblage. In fact, the simplest component solution which successfully loaded all of the 15 observational taxa extracted eight factors and accounted for over 89% of the variance computed to be present in the original correlation matrix. All of the factors were unipolar or only weakly bipolar, indicating that little evidence for direct economic replacement behavior is present in the data. Direct economic replacement patterns would produce strongly bipolar factors reflecting strong negative correlations between taxa. This solution was accepted and will be discussed here.

TABLE 9-4

PEARSON CORRELATIONS BETWEEN TAXON ABUNDANCES, COMPARED ACROSS 39 SELECTED POOLSETS

	ANTI	ODOC	OVIS	CERBIS	ARTIO	LGMAM	MLMAM	MELE	LEPU	SYLV	SMDM	LGBD	VLM	SMAM	LAGB
ANTI	1.000														
ODOC	0.233	1.000													
OVIS	0.069	-0.048	1.000												
CERBIS	0.147	0.250	0.177	1.000											
ARTIO	0.519	0.394	0.094	0.166	1.000										
LGMAM	0.569	0.540	-0.081	0.079	0.457	1.000									
MLMAM	0.080	0.125	0.458	0.591	0.161	-0.030	1.000								
MELE	0.012	-0.015	0.114	-0.111	-0.110	0.107	0.091	1.000							
LEPU	0.469	0.677	-0.150	0.345	0.567	0.812	0.075	-0.070	1.000						
SYLV	0.411	0.630	-0.115	0.437	0.484	0.784	0.132	-0.035	0.952	1.000					
SMDM	0.345	0.512	-0.136	0.289	0.381	0.595	0.076	0.277	0.759	0.754	1.000				
LGBD	0.095	0.057	0.447	-0.061	0.153	-0.008	0.291	0.145	-0.077	-0.045	-0.027	1.000			
VLM	0.068	-0.061	0.220	0.066	-0.012	-0.132	0.004	-0.057	-0.099	-0.075	-0.092	0.078	1.000		
SMAM	-0.113	0.415	-0.059	0.225	-0.017	-0.108	0.027	-0.101	0.060	0.004	-0.087	0.039	-0.050	1.000	
LAGB	0.227	0.169	0.243	0.160	-0.036	0.176	0.410	0.117	0.078	0.034	-0.003	-0.053	-0.116	0.295	1.000

Table 9-5

PRINCIPAL COMPONENTS ANALYSIS WITH VARIMAX ROTATION, ON CORRELATION MATRIX PRESENTED IN TABLE 9-4

ROTATED LOADINGS

TAXA [1/]	1	2	3	4	5	6	7	8
ANTI	0.315	-0.004	0.113	-0.046	-0.005	0.255	-0.117	0.825
ODOC	0.736	0.114	-0.518	0.039	0.033	0.067	0.006	0.040
OVIS	-0.103	0.733	0.162	0.016	0.268	0.315	-0.230	-0.015
CERBIS	0.242	-0.087	-0.141	0.077	0.897	0.006	-0.098	0.043
ARTIO	0.389	0.190	-0.064	0.131	0.119	-0.186	0.072	0.741
LGMAM	0.840	0.004	0.130	-0.035	-0.171	0.227	0.065	0.294
MLMAM	0.009	0.379	0.035	-0.061	0.798	0.273	0.080	0.045
MELE	0.036	0.109	0.059	-0.965	-0.035	0.083	0.026	-0.051
LEPU	0.928	-0.088	-0.055	0.085	0.116	-0.003	0.041	0.249
SYLV	0.931	-0.064	0.014	0.058	0.210	-0.042	0.017	0.152
SMDM	0.796	-0.098	0.053	-0.358	0.170	-0.144	0.032	0.127
LGBD	-0.031	0.889	-0.102	-0.121	-0.025	-0.153	0.030	0.122
VLM	-0.076	0.085	0.011	0.026	0.028	-0.071	-0.974	0.037
SMAM	-0.014	-0.023	-0.953	0.058	0.083	0.145	0.014	-0.054
LAGB	0.032	0.019	-0.187	-0.081	0.173	0.920	0.085	0.069

VARIANCE EXPLAINED BY ROTATED COMPONENTS

1	2	3	4	5	6	7	8
3.939	1.569	1.312	1.127	1.684	1.254	1.053	1.450

PERCENT OF TOTAL VARIANCE EXPLAINED

1	2	3	4	5	6	7	8
26.261	10.459	8.748	7.512	11.225	8.361	7.017	9.667

1/ Abbreviations as in text, page 9-12.

Factor 1 loaded very heavily on jackrabbit and cottontail, and loaded significantly on deer, large mammal, and small/medium mammal. Bighorn, large bird, very large mammal, and small mammal all loaded as weak negative scores, indicating that these taxa tend to correlate negatively, if at all, with the prime factor. Pronghorn loaded weakly, indicating that deer and lagomorphs tend to co-occur more commonly than do pronghorn and lagomorphs. This is a remarkable result, which may reflect either scheduling decisions or encounter hunting.

Put simplistically, one would not expect jackrabbits, an open-country species, to correlate more strongly with deer, a woodland species, than with pronghorn, another open-country species. Jackrabbits are best taken in drives, as are pronghorns (see the discussion of Factor 8 below). Deer are only occasionally best taken in drives. The jackrabbit-deer association may reflect winter hunts, as this period is the only time that deer and jackrabbits are present in large numbers in the same habitat. The habitat in question would then by inference have been, most likely, pinon-juniper scrub adjacent to steppe grassland. This habitat would also have been favored for farming. The best alternative explanation would seem to suggest that both deer and jackrabbits were taken mostly when encountered in the course of farm work. A coupled inference in either case is that pronghorn and jackrabbits were not commonly net-hunted; a net drive for pronghorn should consistently net numerous jackrabbits as well.

Factor 2 loaded very strongly on large bird, strongly on bighorn, and moderately on medium/large mammal. It seems to indicate that bighorn procurement and disposal is somehow associated with large bird consumption. Had the large bird bones not been broken up, they would have been more exactly classified. The content of Factor 2 strongly indicates that bighorn hunting (and turkey consumption?) is not related organizationally or seasonally to intensive hunting of deer, pronghorn, or lagomorphs.

Factor 3 loaded very strongly on small mammal and strongly on deer. It appears to indicate that an aspect of the deer procurement system is independent of the Factor 1 pattern and is directed at rodent and cottontail procurement, but not at jackrabbits or large birds, which produce few fragments classifiable as small mammal. It could represent an encounter hunting or group hunting component occurring in woodlands or in farm plots well away from grasslands. It is analogous in this regard to Factor 2. The deer loadings, however, are driven mainly by a single case, indicating that most deer assemblages do not pertain to the process inferred for this factor.

Factor 4 loaded very highly on turkey and weakly on small/medium mammals. This factor seems to suggest that turkey disposal <u>as recognizable turkey elements</u> is associated only with disposal of essentially unrecognizable fragments of jackrabbits, or else that turkey disposal is basically independent of all other taxa and generates only recognizable bones and fragments so reduced that this analyst could not recognize their avian architecture. He is inclined to dismiss this latter possibility. Bird bones are structurally distinctive, even in severely reduced form. This assemblage may reflect an adaptation to declining environmental richness. Its emphasis on turkeys, its (possibly non-significant) secondary association with rabbits, and its lack of jackrabbits and larger game are strongly

reminiscent of Mesa Verde phase assemblages from southwestern Colorado, which commonly contain little other than cottontail, prairie dog, and turkey bone.

Factor 5 seems to be a complement to Factor 2. It loaded strongly on medium/large mammals and moderately on bighorn (which may be accidental or a spurius correlation), but it did not load on large bird. Instead, it loaded most of the elk-bison variance. This result seems to suggest that procurement of these very large mammals as recognizable items (i.e. probably of elk, given the long-distance transport and intense bone reduction anticipated for bison) is associated with bighorn procurement, but that bighorn bone in this component was more often heavily reduced than was elk-bison bone. In short, when large birds are badly broken up, bighorn bone is not. When bighorn bone is broken up, large bird bone is not significantly present, but recognizable elk-bison bones are present. If elk-bison and bighorn were hunted in the same expeditions and at the same season, a factor like this would be the expected result.

Factor 6 loaded strongly only on lagomorph/large bird bone. This classification in the author's usage is a catchall for unidentifiable, thin, long, and hard splinters of bone. Where refits have allowed identification of this class in the past, identified items have invariable been fragments of the hind limb elements of jackrabbits or of birds of leg length at least as great as that of the wild turkey (e.g., herons, cranes, swans). The author expected this factor to load with turkey and/or large bird and/or jackrabbit and/or small/medium mammal; its independence strongly suggests that the lagomorph/large bird fragments at LA 1178 were not dumped as culinary scraps. The author would speculate that they are in fact the leavings of tool manufacture, specifically of needles, pins, and slender awls, based on similar assemblages of scrap recovered from late McElmo to early Mesa Verde phase sites in southwestern Colorado (Bertram 1989b).

Factor 7 loaded heavily on very large mammal fragments, weakly on bighorn (which again may be spurious), and not at all on any other taxon. As with Factor 5, this suggests that procurement and processing of bighorns and of elk-bison are somehow associated. The author is confident that the VLM category contains little bighorn bone. Bone fragments assigned to VLM are consistently outside the range of length, compactum thickness, and curvature expected even in the largest bighorn ram. The author would speculate that the VLM bones in this case may well be bison. He has noted a tendency for petroglyph panels along the creeks in northeastern New Mexico bison country to be dominated by bighorn and to have bison and elk as secondary figures. This may mean that the bulk of New Mexico bighorns, bison, and elk were in fact creatures of steppe areas broken by rugged topography. Both Spanish accounts and the Lewis-Clark journals have reported association of bison, 'goats', and elk in the high plains country prior to American settlement. This issue of habitat and association would provide fruitful research opportunities for a skilled historian. The inference that folk from LA 1178 hunted in the Pecos and Canadian bison ranges is not implied, but neither is it unreasonable. If the elk-bison-bighorn association was reality there, it probably was the case in similar but much nearer contexts (e.g. San Agustin Plains, Tularosa Basin, Estancia Basin). This faunal association would account nicely for both Factor 5 and Factor 7.

Factor 8 loaded on pronghorn and on artiodactyl and weakly only on large mammal and jackrabbit (which loads too weakly to allow confidence that the association is meaningful). This factor would seem to be a pure pronghorn procurement factor (i.e., a plains hunting factor), and it would appear to reflect the disposal of variably reduced skeletal parts ranging from fully identifiable bone pieces through partially identifiable artiodactyl fragments to essentially unidentifiable items assignable only to large mammal. Its structure and the taxa present fits the author's expectations for corporate plains drive hunts well, which is why the weak jackrabbit presence was accepted at all; it may in fact indicate net-hunting on adjacent steppe grasslands.

Factor scores from the principal components analysis (Table 9-6) counts from those taxa which loaded most highly on those taxa in Figure 9-1. The reader will note that obviously high correlations were achieved in cases where data are not sparse and where a taxon loaded strongly on only one factor. The reader will also note the much less satisfactory correlations achieved for taxa which were well-represented but which loaded on more than one factor (especially <u>deer</u> and <u>unidentified large mammal</u>) and for taxa which were sparse and multi-loading (especially <u>bighorn</u>. A simplified and clarified version of the factor score table is next presented (Table 9-7). It indicates, schematically by factor, exactly which poolsets loaded highly on which factors. Data in this poolset listing are presented in trench order and in stratigraphic order (top to bottom) within each trench. The patterns displayed in this table will not be discussed.

In Trench 1, only two poolsets (92 and 93) were recognized. The taxa represented are large: elk/bison, pronghorn, and fragments thereof.

In Trench 2, seven poolsets (112-119) reflect a trend from early pronghorn and some deer/rabbit use toward expanded use of turkey and large bird which are more fragmented in higher strata. The uppermost stratum is again pronghorn-dominated.

In Trench 3, three poolsets (2-4) indicate a progression from a diverse mix of species to a large mammal pattern focused on pronghorns.

In Trench 4, two poolsets (13 and 14) indicate little change; both are dominated by turkey, large bird, fragmented small/medium mammals, and pronghorn.

In Trench 5, with three poolsets studied (22, 23, 25), the large bird-turkey-small/medium mammal component only appears in subfloor context. Room fill materials are again dominated by pronghorn.

Trench 6 had four poolsets (53-56). The deepest of these was not clearly affiliated with any factor pattern. All higher levels contained turkey, large bird, and/or pronghorn patterns; the deer/rabbit pattern of Factor 1 was best expressed in the west room floor fill.

In Trench 7, two poolsets (63 and 64) were present, but only the deepest (the subfloor poolset) was assignable. It had moderate loadings on the large bird/bighorn/medium-large

Table 9-6

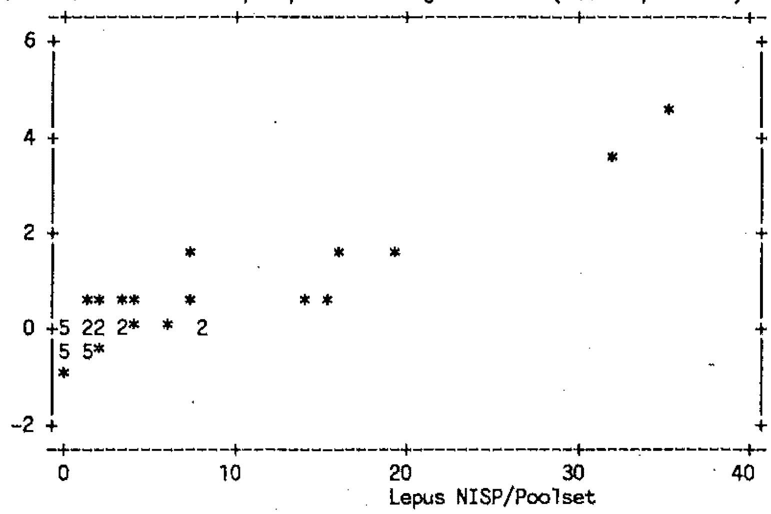
FACTOR SCORES FOR THE SELECTED 39 POOLSET PROVENIENCES, BASED ON THE FACTOR ANALYSIS PRESENT IN TABLE 9-5

Poolset	Case	FACTOR(1)	FACTOR(2)	FACTOR(3)	FACTOR(4)	FACTOR(5)	FACTOR(6)	FACTOR(7)	FACTOR(8)
2	1	-0.702	-0.450	0.260	0.561	-0.101	-0.239	0.292	-0.202
3	2	1.184	-0.926	0.357	0.290	4.840	-1.104	0.359	0.458
4	3	-0.086	-0.121	-5.786	0.358	0.511	0.914	0.057	-0.375
13	4	-0.514	0.101	-0.160	-0.540	-0.200	-0.370	0.321	-0.283
14	5	-0.329	-0.203	0.121	-2.956	-0.508	-0.292	0.179	0.272
22	6	-1.044	-0.160	-0.096	0.620	0.383	-1.153	0.842	1.577
23	7	-0.753	-0.326	0.124	0.576	-0.003	-0.628	0.495	0.277
25	8	-0.781	-0.456	0.069	-0.524	-0.144	-0.479	0.311	-0.140
32	9	-0.104	0.171	-0.009	-0.402	-0.652	-0.159	0.261	-0.785
33	10	-0.176	-0.378	-0.015	0.391	0.109	-0.160	-3.171	-0.626
34	11	1.074	0.337	-0.312	0.321	-0.695	-0.398	0.160	-0.942
35	12	-0.423	-0.570	0.129	-0.734	-0.205	-0.277	0.154	-0.372
36	13	-0.322	-0.265	0.069	0.539	-0.004	-0.289	0.368	0.313
37	14	0.423	-0.104	-0.145	-0.326	-0.627	-0.155	0.188	-0.744
38	15	-0.440	1.332	0.021	0.316	-0.366	-0.837	0.647	-0.212
53	16	-0.329	-0.389	0.377	-0.429	-0.492	0.012	0.225	-0.636
54	17	-0.253	1.128	0.965	1.133	-0.267	0.618	-0.230	-1.300
55	18	0.245	-0.252	-0.130	-2.713	-0.068	-0.992	0.124	-0.483
56	19	-0.525	-0.387	0.318	0.630	-0.139	-0.208	0.302	-0.649
63	20	0.083	-0.100	0.341	0.789	-0.528	0.250	0.290	-0.917
64	21	-0.291	0.973	0.867	-0.162	2.271	4.060	0.202	-1.141
73	22	-0.544	5.020	-0.043	-0.338	0.461	-0.781	0.963	0.900
74	23	-0.300	-0.717	0.419	-0.956	-0.380	-0.020	0.061	0.538
75	24	0.152	-0.582	0.063	-3.227	0.379	1.339	0.292	-0.099
76	25	0.395	-0.005	-0.378	0.595	-0.004	-0.751	0.633	1.861
77	26	-0.517	-0.093	0.155	0.622	-0.527	1.340	0.424	-0.514
78	27	-0.484	-0.198	0.025	0.326	-0.488	-0.343	-3.200	-0.354
82	28	-0.117	1.443	0.108	-0.445	0.663	-0.223	-3.622	1.364
92	29	-0.634	-0.308	0.346	0.596	0.061	-0.194	0.403	-0.494
93	30	-0.857	-0.933	0.167	0.468	0.810	-0.408	0.096	0.552
102	31	0.122	0.004	-0.576	0.812	-0.560	-0.251	0.181	-0.891
103	32	-0.564	-0.433	0.272	0.560	-0.220	-0.264	0.267	-0.626
112	33	-0.389	-0.416	0.287	0.650	-0.226	-0.298	0.289	-0.559
113	34	1.252	-0.008	0.681	0.820	-1.058	2.218	0.242	0.836
114	35	3.046	-0.471	0.523	0.582	0.665	-0.899	0.068	-0.844
115	36	0.335	-0.811	-0.049	0.370	-0.874	1.854	0.031	3.622
116	37	-0.626	-0.372	0.285	0.602	-0.142	-0.243	0.334	-0.487
117	38	-0.314	-0.728	0.475	0.373	-0.459	0.082	0.122	1.887
119	39	4.106	0.651	-0.126	-0.149	-1.221	-0.274	0.041	0.218

Figure 9-1

PLOTS OF COUNTS PER POOLSET FOR TAXA PLOTTED AGAINST THE FACTOR SCORES FOR EACH POOLSET FOR THE FACTORS ON WHICH THEY LOADED MOST SIGNIFICANTLY. DATA FROM TABLE 9-2; SCORES FROM TABLE 9-6

Factor 1 scores vs. counts per poolset for jackrabbit (all 39 poolsets)



Factor 1 scores vs. counts per poolset for cottontail (all 39 poolsets)

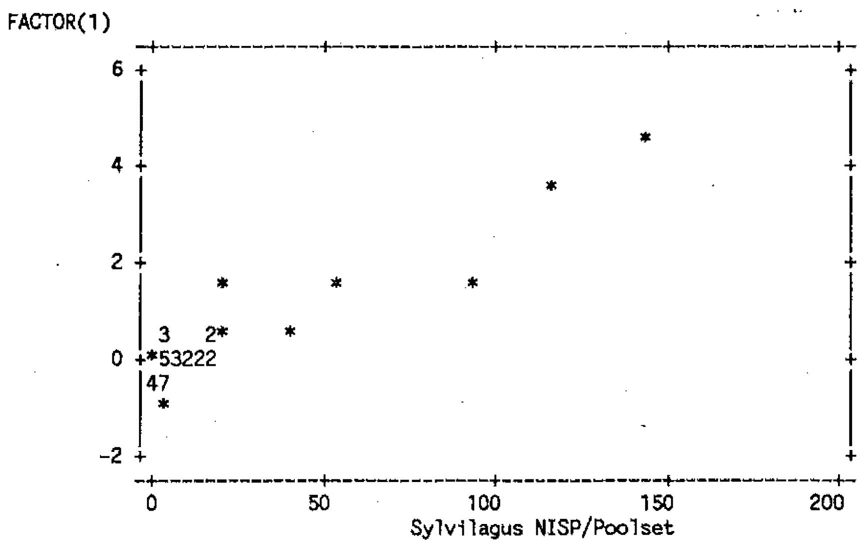
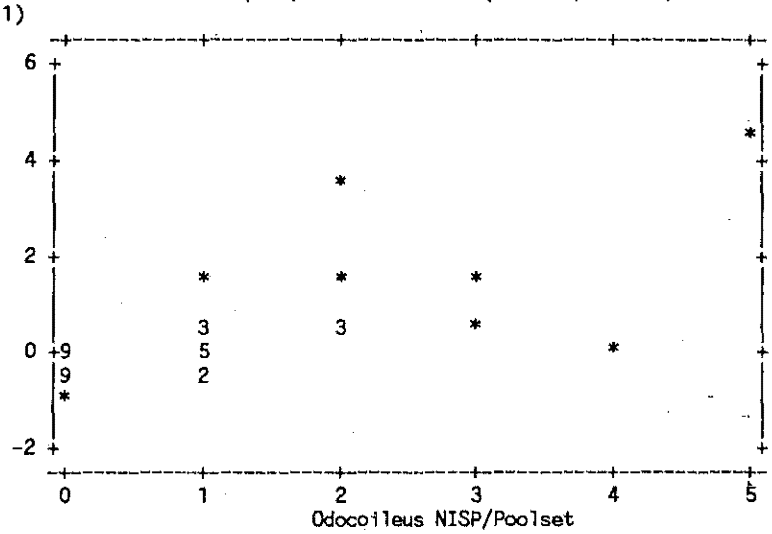


Figure 9-1
(continued)

Factor 1 scores vs. counts per poolset for deer (all 39 poolsets)
FACTOR(1)



Factor 1 scores vs. counts per poolset for large mammal (all 39 poolsets)
FACTOR(1)

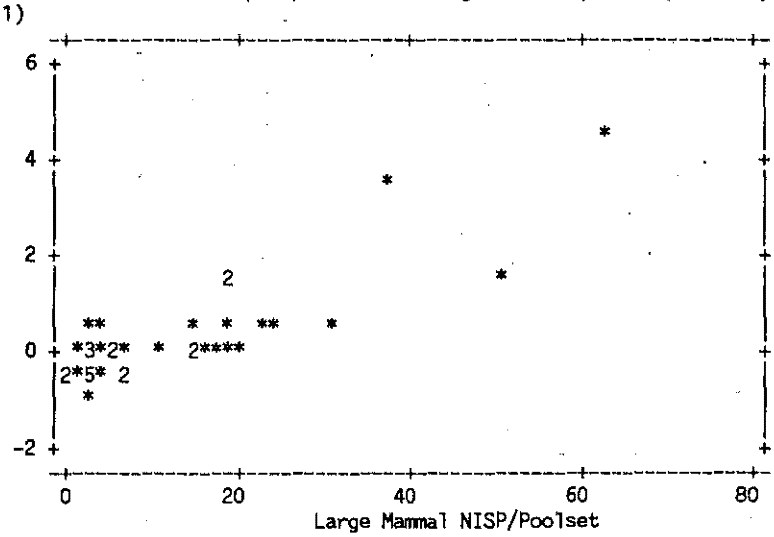
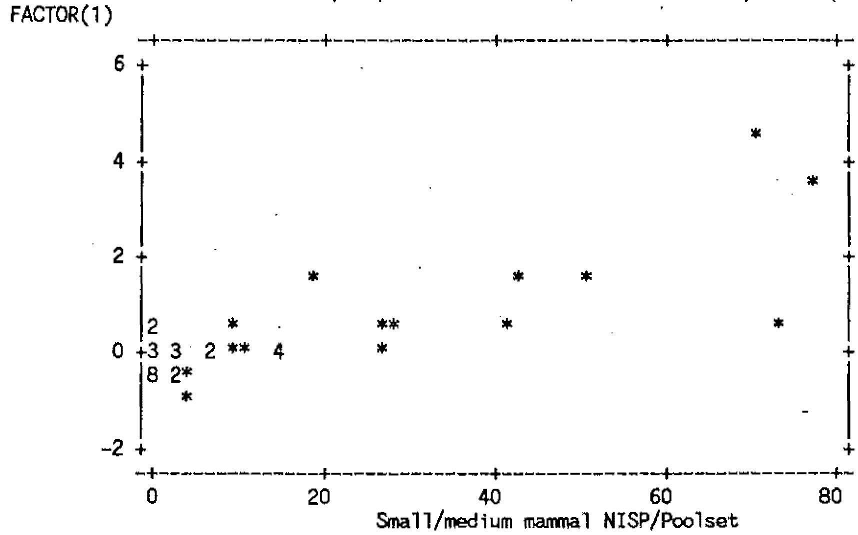


Figure 9-1
(continued)

Factor 1 scores vs. counts per poolset for small/medium mammal (all 39 poolsets)



Factor 2 scores vs. counts per poolset for large bird (all 39 poolsets)

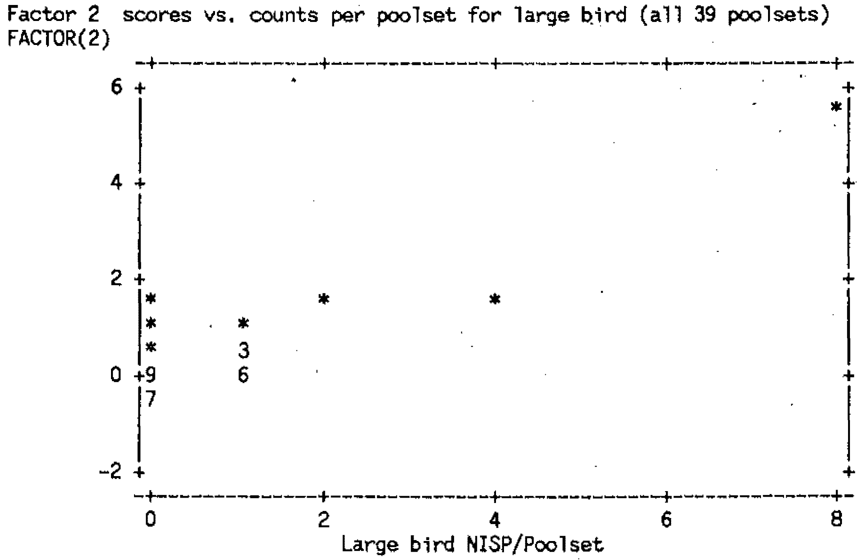
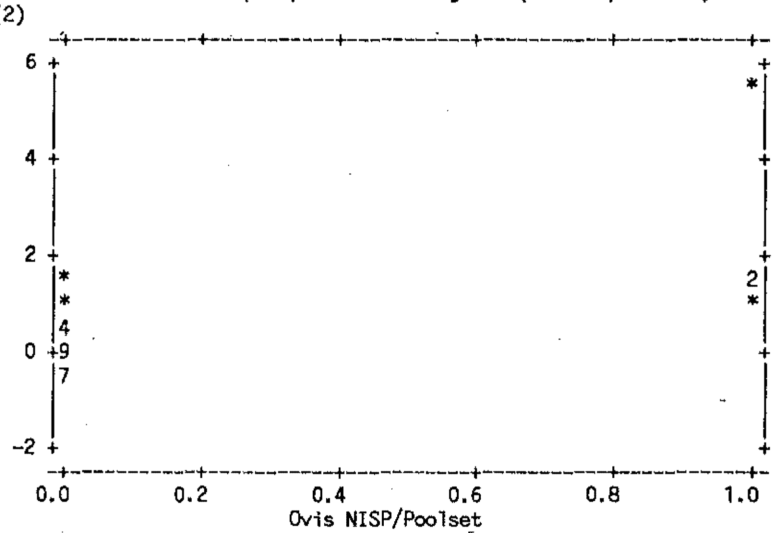


Figure 9-1
(continued)

Factor 2 scores vs. counts per poolset for bighorn (all 39 poolsets)
FACTOR(2)



Factor 2 scores vs. counts per poolset for medium/large mammal (all 39 poolsets)
FACTOR(2)

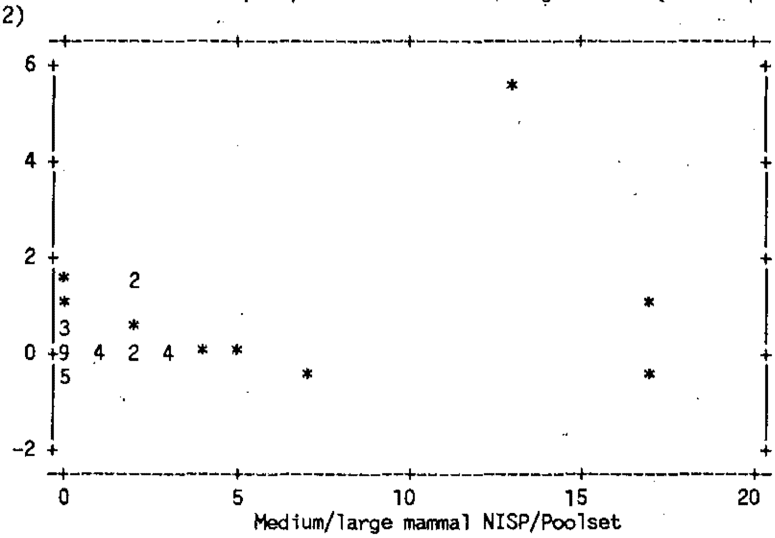
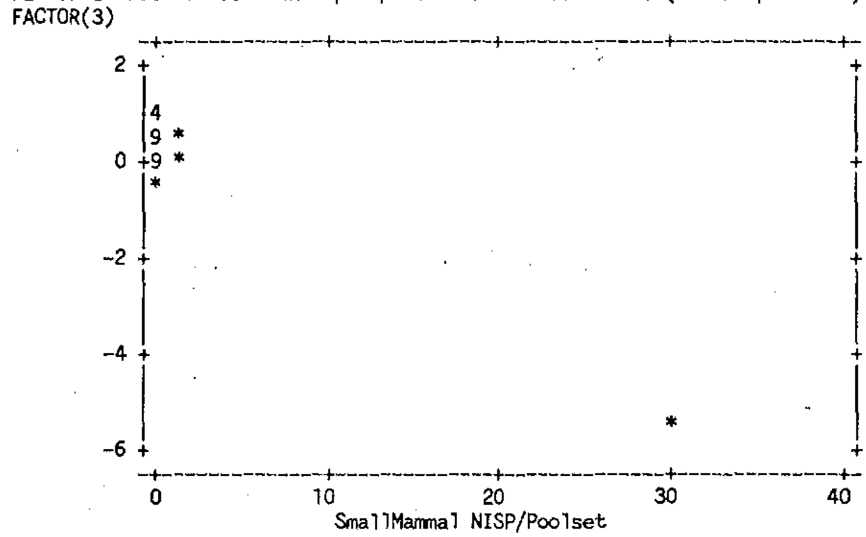


Figure 9-1
(continued)

Factor 3 scores vs. counts per poolset for small mammal (all 39 poolsets)



Factor 3 scores vs. counts per poolset for deer (all 39 poolsets)

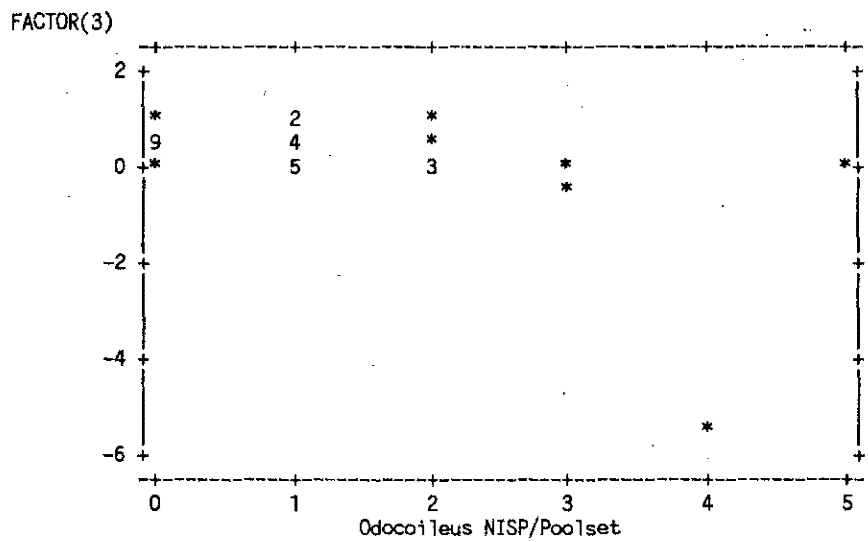
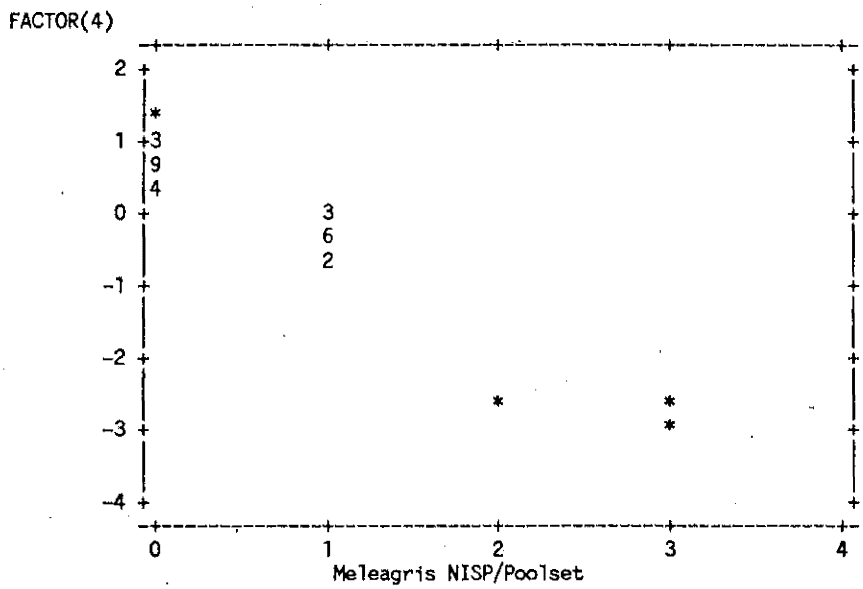


Figure 9-1
(continued)

Factor 4 scores vs. counts per poolset for turkey (all 39 poolsets)



Factor 4 scores vs. counts per poolset for small/medium mammal (all 39 poolsets)

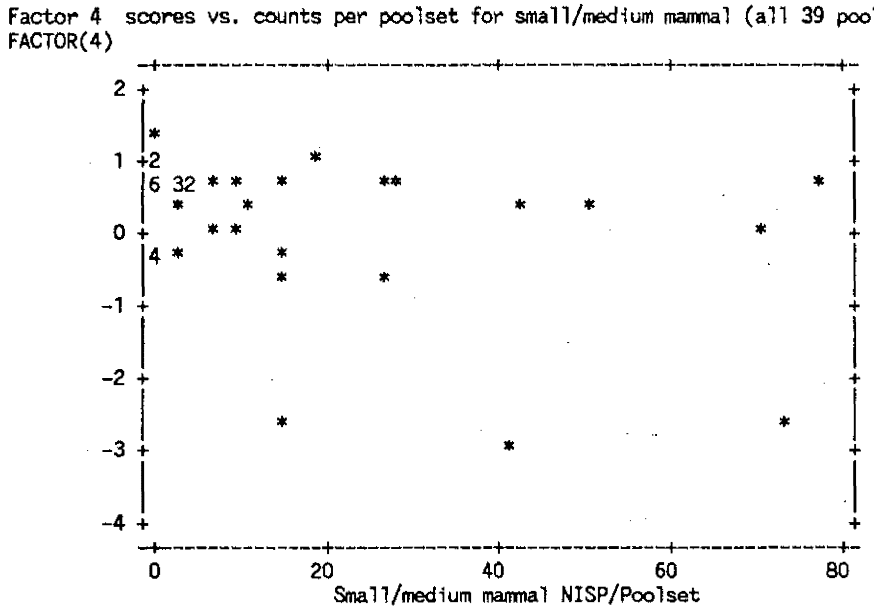
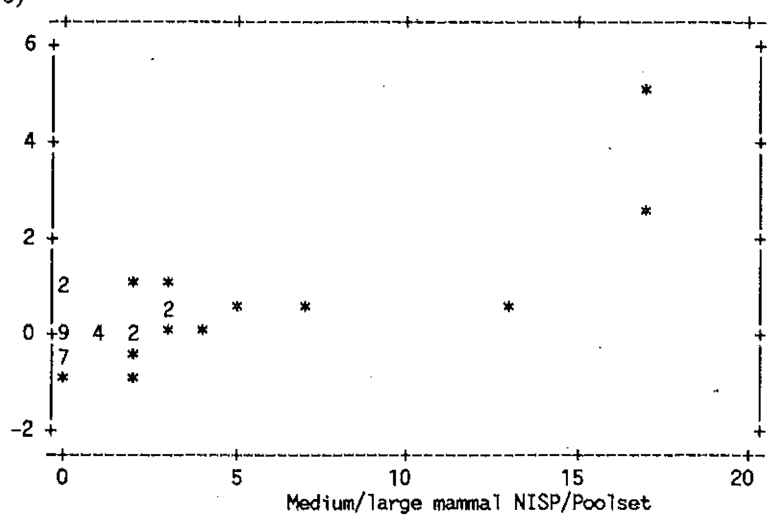


Figure 9-1
(continued)

Factor 5 scores vs. counts per poolset for medium/large mammal (all 39 poolsets)
FACTOR(5)



Factor 5 scores vs. counts per poolset for bighorn (all 39 poolsets)
FACTOR(5)

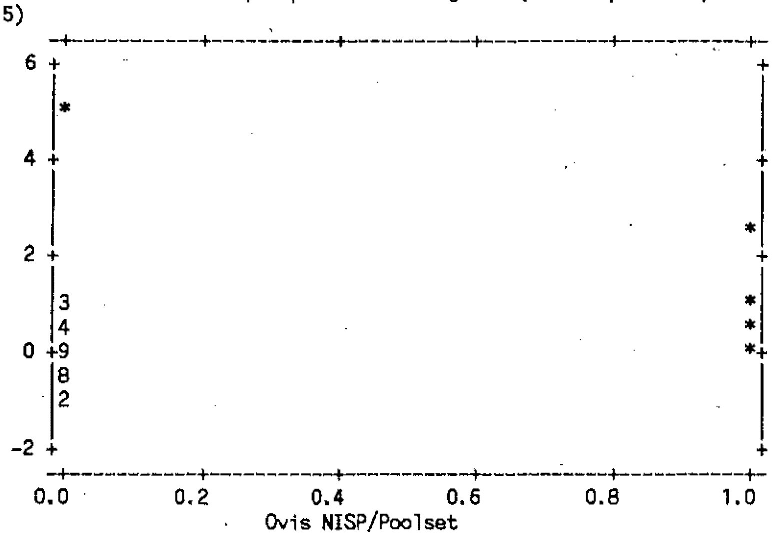
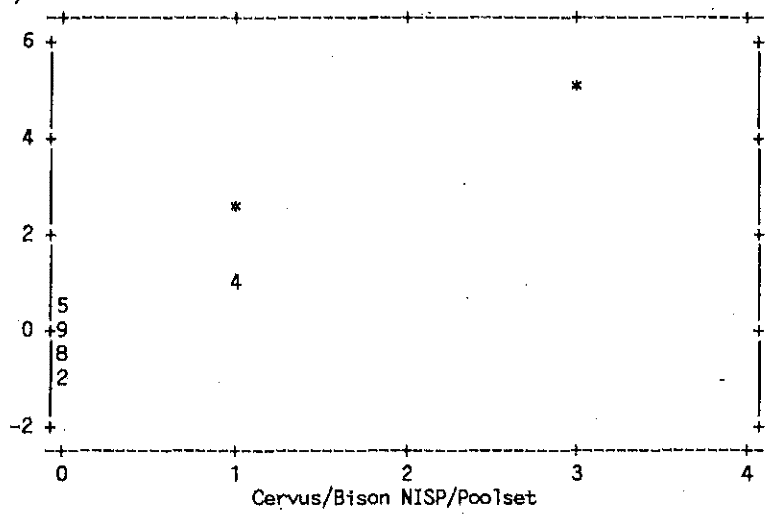


Figure 9-1
(continued)

Factor 5 scores vs. counts per poolset for elk/bison (all 39 poolsets)
FACTOR(5)



Factor 6 scores vs. counts per poolset for lagomorph/large bird (all 39 poolsets)
FACTOR(6)

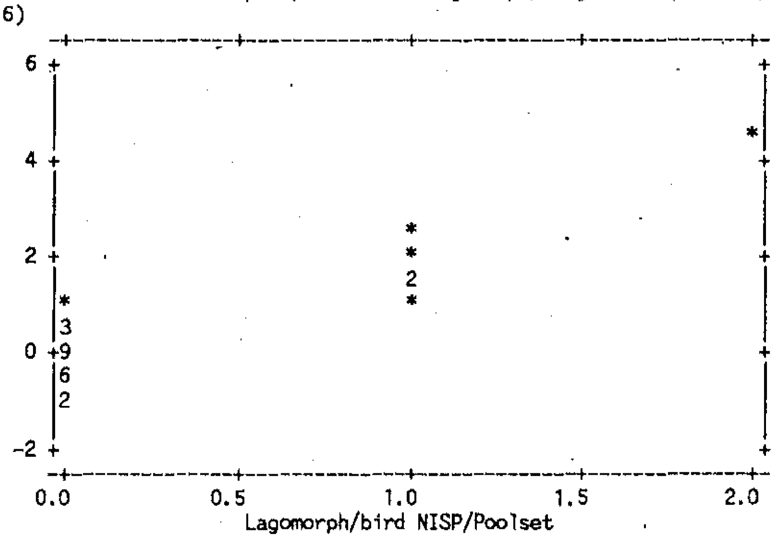
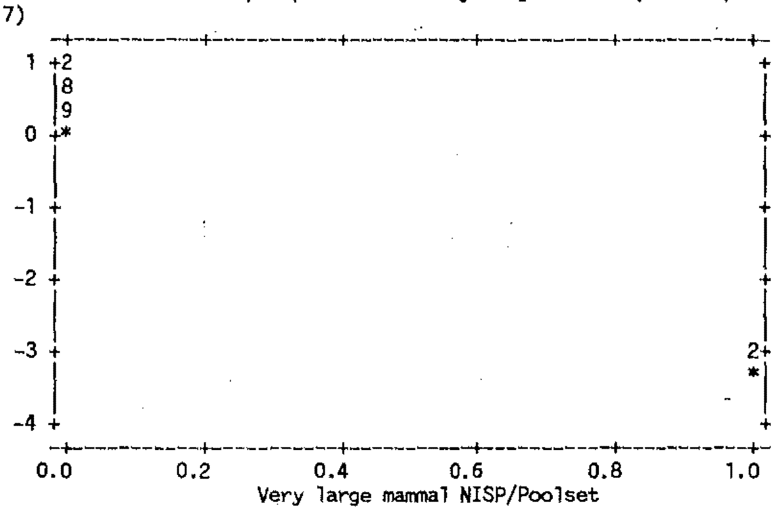


Figure 9-1
(continued)

Factor 7 scores vs. counts per poolset for very large mammal (all 39 poolsets)
FACTOR(7)



Factor 7 scores vs. counts per poolset for bighorn (all 39 poolsets)
FACTOR(7)

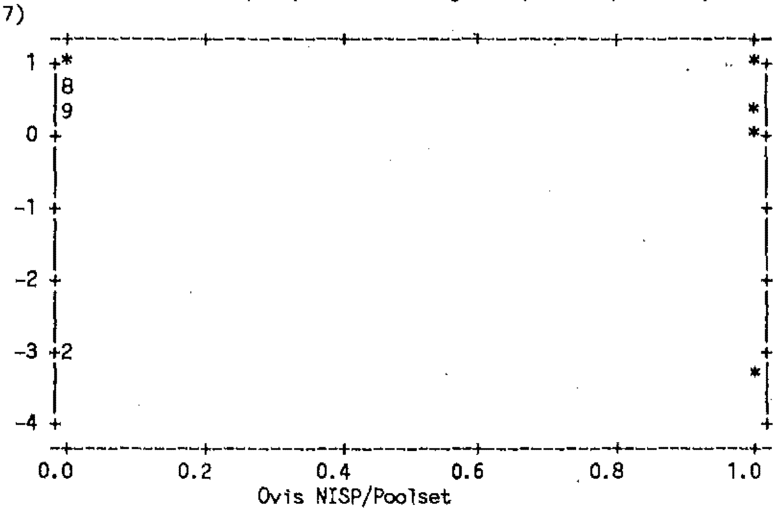
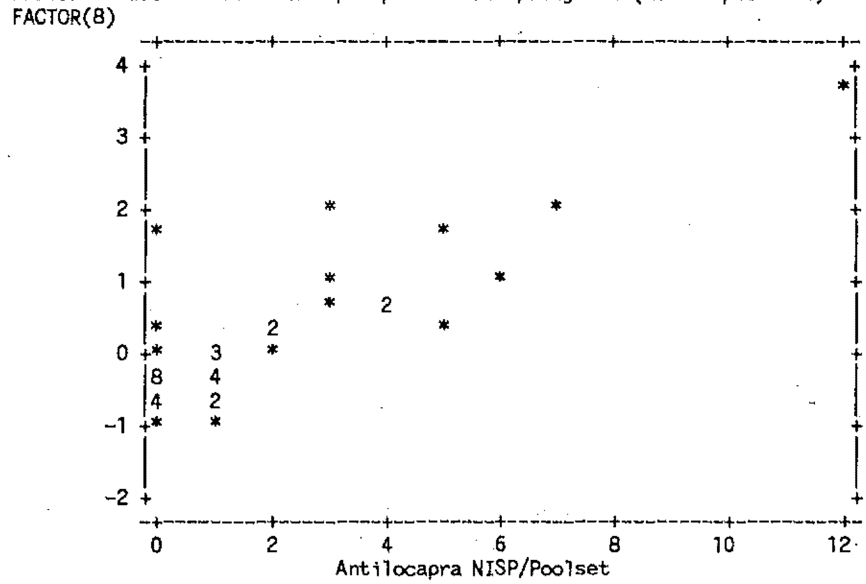


Figure 9-1
(continued)

Factor 8 scores vs. counts per poolset for pronghorn (all 39 poolsets)



Factor 8 scores vs. counts per poolset for artiodactyl (all 39 poolsets)

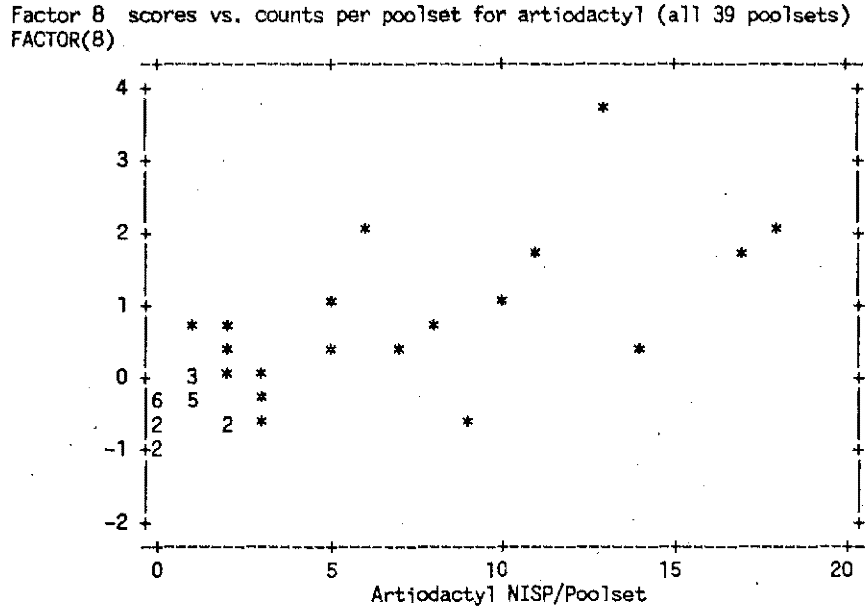
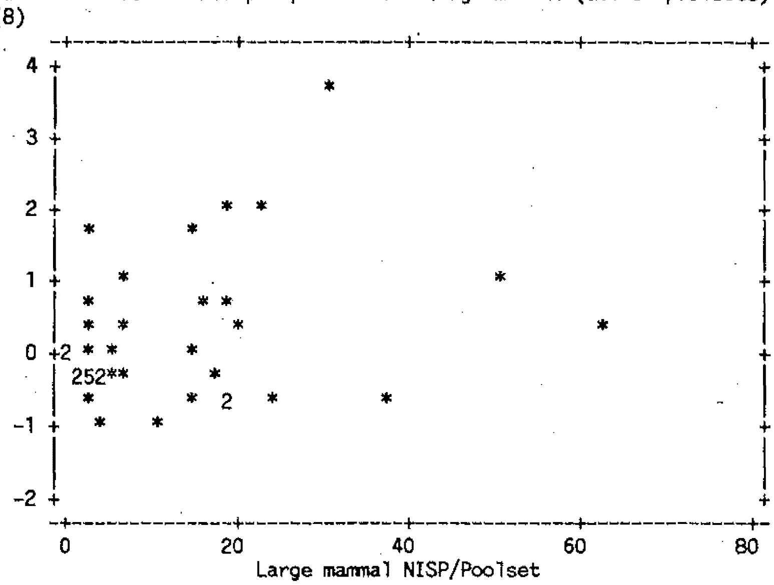


Figure 9-1
(continued)

Factor 8 scores vs. counts per poolset for large mammal (all 39 poolsets)



Factor 8 scores vs. counts per poolset for jackrabbit (all 39 poolsets)

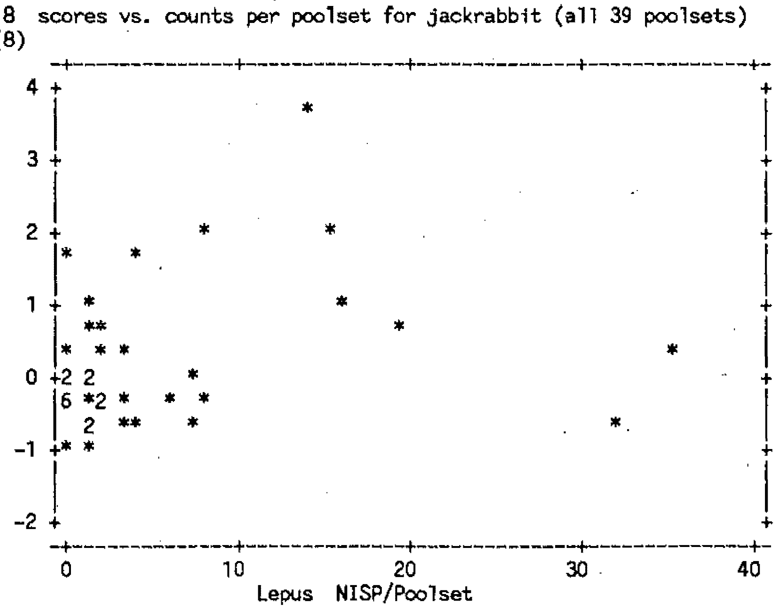


Table 9-7
IDEALIZED FACTOR SCORE TABLE, SHOWING SIGNFICANT LOADINGS
OF ALL POOLSETS BY FACTOR

Factor # / Taxa Loaded / Poolset #	Trench #	1 Jackrabbit Cottontail Deer Lg. Mammal Sm/Med Mammal	2 Lg Bird Bighorn Med/Lg Mammal	3 Small Mammal (deer?)	4 Turkey sm/med Mammal	5 Elk/bison Med/Lg Mammal (bighorn?)	6 Lag or Large Bird	7 Very Large Mammal (Bighorn?)	8 Pronghorn Artiodactyl Lg Mammal (jackrabbit?)
92	1	-	-	-	-	-	-	-	M
93	1	-	-	-	-	M	-	-	H
112	2	-	-	-	-	-	-	-	H
113	2	H	-	-	-	-	H	-	M
114	2	H	-	-	-	M	-	-	-
119	2	H	M	-	M	-	-	-	M
117	2	-	-	-	-	-	-	-	H
115	2	M	-	-	-	-	-	-	H
116	2	-	-	-	-	-	-	-	H
2	3	-	-	-	-	-	-	-	M
3	3	H	-	-	-	H	-	-	M
4	3	-	-	H	-	M	H	-	M
13	4	-	-	-	M	-	-	-	M
14	4	-	-	-	H	-	-	-	M
22	5	-	-	-	-	-	-	-	H
23	5	-	-	-	-	-	-	-	M
25	5	-	-	-	M	-	-	-	M
53	6	-	-	-	M	-	-	-	M
54	6	-	H	-	-	-	-	-	-
55	6	M	-	-	H	-	-	-	M
56	6	-	-	-	-	-	-	-	-
63	7	?	-	-	-	-	-	-	?
64	7	-	M	-	M	H	H	-	-
73	8	-	H	-	M	-	-	-	M/H
74	8	-	-	-	M	-	-	-	M
75	8	L	-	-	H	-	H	-	M
76	8	M	-	-	-	-	-	-	H
77	8	-	-	-	-	-	H	-	M
78	8	-	-	-	-	-	-	H	M
102	8A	L	-	-	-	-	-	-	-
103	8A	-	-	-	-	-	-	-	M
32	9	-	-	-	-	-	-	-	-
33	9	-	-	-	-	-	-	H	-
34	9	-	-	-	-	-	-	-	-
35	9	-	-	-	M	-	-	-	M
36	9	-	-	-	-	-	-	-	M
37	9	-	-	-	M	-	-	-	-
38	9	-	H	-	-	-	-	-	M
82	10	-	H	-	M	?	-	H	H
# of times loaded		9-10	6	1	12	5-6	5	3	29-30
# of high loads		4	4	1	3	2	5	3	8-9
# of moderate loads		3	2	0	9	3	0	0	20-22

KEY: H = High Loading M = Moderate Loading L = Low Loading ? = Doubtful Loading

mammal factor and the turkey/small-medium mammal factor; it loaded strongly on the elk-bison/medium-large mammal and the heavily reduced lagomorph/large bird factor.

In Trench 8, six poolsets (73-78) were defined. These seem to indicate a trend from a very large mammal and fragmented pronghorn/artiodactyl assemblage in the deep pre-construction midden to a pronghorn and fragmented jackrabbit or large bird assemblage and finally to a pronghorn, deer, jackrabbit, and cottontail assemblage just before construction. The floor-context assemblage had turkey, small/medium mammal, fragmented jackrabbit/large bird, and pronghorn components present. Floor fill and roomfill materials seem to continue the floor-context assemblage with the addition (non-significant?) of bighorn and an increased fragmentation level of large birds and medium/large mammals.

Trench 8A (two poolsets: 102 and 103) showed a shift from the pronghorn factor (Factor 8) to the deer-rabbit factor (Factor 3).

In Trench 9 (seven poolsets: 32-38), the assemblage seems to be a variably fragmented mix of turkey and pronghorn from bottom to top.

Trench 10 (poolset 82 only) was loaded most heavily on pronghorn, very large mammal, bighorn, and large bird. Turkey was also present. Only the very fragmented lagomorph/bird factor, the deer/cottontail/jackrabbit factor, and the small mammal/deer factor were not important in this undoubtedly mixed and stratigraphically secondary deposit.

The principal components analysis demonstrates that independently varying procurement, processing, and disposal trajectories are probably present in the Gallinas Springs deposits. These trajectories clearly indicate that more intensive study, perhaps incorporating the collections from the two field school sessions at LA 1178, may allow the detailed reconstruction of the seasons, habitat contexts, and strategies of Gallinas Springs faunal procurement. Perhaps more importantly, the assemblage patterns may be expected to reflect changes in adaptation in response to the dramatic climatic changes which massively dislocated populations almost everywhere else in the southwest during the Pueblo III period. One of the greatest research values of the Gallinas Springs site must be its ability to document a sequence of changes that did not culminate in abandonment until decades after other areas of the Southwest were essentially depopulated.

9.6 WORKED BONE ARTIFACT DESCRIPTION

Perhaps the most evident pattern encountered in the faunal assemblage echoes a pattern also seen in ceramics, lithics, and ornamental/ceremonial objects. Of 22 tools or worked bone items, seven came from Trench 8, four from Trench 9, and four from Trench 10. Descriptions of these items, and of several of the most informative examples of butchering marks, are presented below.

FS 941 Trench 1 Unit 2 Level 3 Poolset 93

This object is a rather expedient awl on a splinter of *artiodactyl metatarsal*, probably from a deer. The butt has been ground slightly and the tip may have also been ground, but no effort was made to smooth the jagged bit shank. The tool bit is heavily polished. The tip is wedge-shaped and tip angle varies from 25° to 75°, depending on orientation. The tool bears minimal prehension polish. It is 71 mm in overall length.

FS 1130 Trench 2 Unit 1 Level 6 Poolset 113

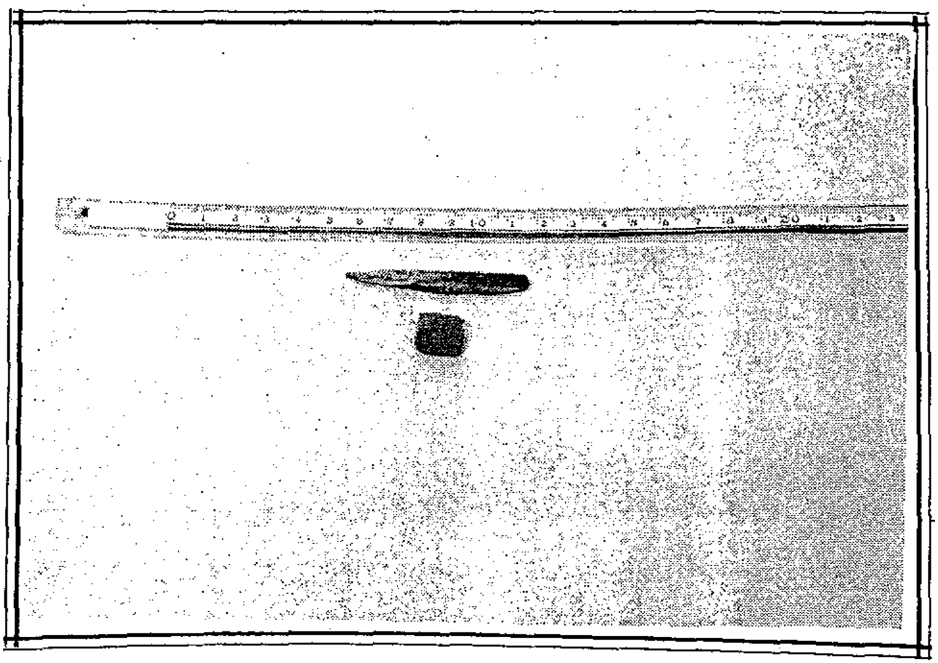
This item is a nearly complete third cervical vertebra from a young mature male pronghorn with incomplete apophyseal unions anteriorly and posteriorly. The bone is remarkable in that it retains evidence of four disarticulation blows from a stone ax or heavy biface chopper. The blows were directed with the ax blade perpendicular to the axis of the vertebral column; all four were placed 10-15 mm anterior to the posterior central articulation. All four were directed diagonally at the "corners" of this rather rectangular element. They indicate the use of an ax with a bit angle of about 50°. The bit edge was somewhat rounded and blunted. This object is unusual. Although both Anasazi and Mogollon disarticulated animals most often by breakage (with an ax or maul?), it is truly unusual to encounter an intact chopped vertebra in village middens in either area. Rather, vertebrae were typically mashed into small fragments, which were then boiled for soup/grease salvage. One must infer that the butcher in this case intended to disarticulate the vertebral column. It is clear that he/she was skillful but not particularly determined to break the centrum for soup-stock. The bone may have been roasted but was probably never boiled. This would seem to be yet another bit of evidence of the apparent protein prosperity of Gallinas Springs Pueblo.

FS 1163 Trench 2 Unit 1 Level 12 Poolset 115

This object (Photo 9-1) is an antler fragment which has been ground into a rhomboidal tablet or die 15 x 15 x 3 mm in size. Three sides and the cancellum face are ground perpendicular to the plane of the piece. The fourth side exhibits no grinding; it was carved and split off, almost as if to shorten the shank of a tool which was made, used, and then found to be a bit too long for comfort.

FS 1155 Trench 2 Unit 1 Level 11 Poolset 119

This item is a left distal pronghorn humerus, from a mature animal. It was broken for marrow, producing a jagged 50° tip which was then used expediently as a tool. As a result, the tip became polished and rounded (radius of curvature about 1.5 mm). This item bears no other evidence of use or modification.



A

B

Photo 9-1. A: FS 120; Bird bone awl. B: FS 1163; Antler tablet or die.

FS 120 Trench 4 Unit 2 Level 7 Poolset 13

This object (Photo 9-1) is a complete large bird femur (?) splinter awl. It is 60 x 9 x 1 mm in size. The tip angle is 19°. All edges are polished from prehension or use.

FS 521 Trench 6 Unit 2 Level 8 Poolset 53

This item is a distal left turkey femur from a medium to large bird, probably a tom. It was cut circumferentially at 28 mm from the distal end, and a bead stock or tube was snapped off. The cutting work was well-done, using a stone knife (probably a thin flake). The object is classified as <u>bead scrap</u>.

FS 614 Trench 7 Unit 2 Levels 1-4 Poolset 61

Item A is a burned fragment of artiodactyl metapodial. It appears to bear external <u>polish</u>.

Item B is an artiodactyl pubis fragment. It bears chop marks from a sharp chipped stone or groundstone ax over the inferior aspect and on both fractured ends.

Item C, in two pieces, is a badly delaminated shaft splinter from a medium or large mammal. Its exterior surface is <u>highly polished</u>. Over the polish are numerous parallel transverse scratches or cuts. Some of these appear to be small rodent gnawing marks, but others appear to have been cut using a stone knife. One edge and one end of the object appear to have been <u>ground</u> to a tapering round section; the object is probably an <u>awl shank fragment</u>.

FS 632 Trench 7 Unit 2 Level 7 Poolset 63

This item, from floor surface contact on the Feature 5 floor, is a <u>tool shaft fragment</u> in three pieces. It is probably a shank fragment from an artiodactyl long bone awl. Its one surviving margin is heavily use-polished over grinding.

FS 712 Trench 8 Unit 1 Level 1 Poolset 71

This object is a <u>pin or needle tip</u> made on a small/medium mammal or large bird shaft. It is badly eroded. The remaining shaft portion is 37 mm long. The object is parallel-sided and is 4 mm wide by 2 mm thick. The tip, although badly eroded, is visibly polished and rounded.

FS 707 Trench 8 Unit 2 Level 1 Poolset 71

This item is a proximal left pronghorn ulna from an older female. The shaft is broken away perpendicularly to the bone's axis at 30 mm distally from the proximal end of the radial articulatory scar. The broken shaft end is polished and carved, indicating that the object was used as a tool. No definite prehension polish is present on the object. Ulna awls were common in the 1974 excavations at Gallinas Springs. From photographs (anonymous, n.d.), it appears that the shanks of these were often thinned. The present object is probably another example of this thinned-shank ulna awl subtype.

FS 734 Trench 8 Unit 1 Level 5 Poolset 73

This item is a fragment of long bone shaft from a small/medium mammal or large bird. It bears diagonal grinding striae, some of them deep, over the exterior surface. Overlying and obscuring the grinding is high polish, indicating that the object is a tool fragment.

FS 769 Trench 8 Unit 2 Level 7 Poolset 73

This item is a fragment of bead scrap. It is a proximal left *Buteo* sp. carpometacarpus. The major shaft has been sawn and snapped away; the minor shaft was simply broken off. Two sets of error cuts remain just proximal to the shaft's snap point.

FS 737 Trench 8 Unit 1 Level 6 Poolset 74

This object is a small splinter of small mammal or medium/large bird bone which appears to be rounded or polished on one end. Microscopic examination revealed no definite striae. The object may be scatological.

FS 774 Trench 8 Unit 2 Level 8 Poolset 74

This object is a split distal mature female pronghorn left tibia. It exhibits the longitudinal grooving for splitting which is more often found on artiodactyl metapodials. It is a tool blank or tool butt. As an unusual note, the distal articulator was badly dog-gnawed or human-gnawed before the bone was worked. Medium rodent gnawing is also present; it occurred after shaping.

FS 798 Trench 8 Unit 2 Level 13 Poolset 78

This object is a proximal bend lateral fragment of an artiodactyl or bear rib. It had been cooked and is poorly preserved. A convex break edge 35 mm long (radium of edge curve 26 mm) appears to have been used as an expedient scraper.

FS 338 Trench 9 Unit 2 Level 5 Poolset 36

This item is the right ilium, nearly complete, of a large mature jackrabbit. It has been heavily ground along all surfaces and edges to form a rounded spatulate scraper. Sets of deep, parallel striations are present on the interior aspect; these are variously oriented longitudinally, dorsally, and ventrally. The striations' size range appears to resemble that of typical Magdalena ware temper particles. The object is probably a <u>pot scraper-smoother</u>.

FS 385 Trench 9 Unit 3 Level 8 Poolset 36

This item is the tip fragment of a worn out awl of the "needle-nipple" sort. It was made from a large mammal shaft fragment. It appears to have continued in use long after the needle tip broke away or was worn away from the bulbous bit shank. Its use is difficult to infer, as the retained tip angle of the polished stub is fully 55 degrees.

FS 347 Trench 9 Unit 2 Level 6 Poolset 37

This object (refer to Photo 8-1a, 8-2b), is a bone tube, apparently made from the proximal ulna of a very large bird (not a turkey). The object was snapped distally after grooving. The usual error cuts are present. No signs of the means of separating the proximal end remain. Both ends were then ground and polished smooth and the exterior <u>and interior</u> were polished. The object was then smudged to a high, glossy, ivory-to-black finish. The smudging is most pronounced inside, suggesting that <u>this item might be a cloudblower or pipe component</u>, rather than a simple tube bead. It is intact, and is 52 mm long, 10-13 mm in diameter at the flared end, and 8-10 mm in diameter at the distal (smaller) end.

FS 384 Trench 9 Unit 3 Level 8 Poolset 36

This item is a rectangular fragment of large mammal humerus or femur shaft, 23 x 12 x 3 mm in size. It is curved cylindrically along one diagonal, but is flat along the other axis. It was shaped (accidentally?) by breaking, but it appears to have been subsequently edge-ground or use-polished. It is not a completed tablet; rather, it is best classified as a <u>tablet blank</u> or small <u>expedient scraper</u>.

FS 837 Trench 10 Unit 2 Level 4 Poolset 81

This object is the midsection of the tapering bit shank of a long, triangular, large mammal shaft splinter awl. All surfaces (split edge, exterior, and interior) are very highly polished.

FS 844 Trench 10 Unit 2 Level 6 Poolset 81

This item is an awl made on a long bone splinter, probably from an immature artiodactyl tibia. It is 73 x 12 x 5 mm in dimension. The butt may be partly missing, as the proximal end is jagged and bears prehension polish only in one small area. The tip is triangular, tapering at 20^o, and is minimally damaged by chipping. The tool was ground or reground to shape not long before its last use and little polish overlies the diagonal grinding striae.

FS 849 Trench 10 Unit 2 Level 7 Slump Poolset 81

This object is the distal end of an artiodactyl rib that has been worked or use-eroded into a blunt lozenge shape. It may have been a tool butt.

FS 862 Trench 10 Unit 2 Level 10 Poolset 82

This object is a long, rectangular, sawn and carved section of elk antler beam. Both ends were broken off in excavation; the remaining shaft is 192 x 18 x 8 mm in size. Both sides display grooving marks from the slots carved out prior to splitting out the piece. It bears no obvious polish. Present on edges and on the exterior face are shovel damage, small rodent gnawing, and several grooves perpendicular to the edge which may be use wear. The function of this object is unknown; it may be simply a tool blank.

9.7 HUMAN BONE

Three human bones were found in the FS/CGI excavations. They were a rib, a clavicle, and a tooth.

The tooth (FS 607: Trench 7 Unit 1 Levels 4-6; surface slump; Poolset 61) was definitely a human molar, but its condition was too poor to permit any analysis. It was undergoing massive enamel and dentine exfoliation. The author has seen this condition in human teeth before only in cases of burning. Discoloration on the tooth may be thermal in origin.

The right clavicle (FS 245: Trench 5 Unit 1 Level 5; slump; Poolset 21) was that of a relatively mature individual (actual length 101 mm; estimated length greater than 110 mm). It lacks both ends; it appears that the costal end was broken in situ or prior to deposition and that both ends were damaged further in excavation. It is a medium tan-brown in color and is mottled; these colors are usually viewed by the author as evidence of thermal alteration. Discoloration of this bone is darkest and most pronounced at the costal end. The bone is root-etched. The cancellous chamber has no soil fill.

The bone bears, on the dorso superior margin, two sets of transverse cut marks: 1) approximately 42 mm from the achromial end, and 2) approximately 36 mm from the achromion end. A modern cut is present at 29 mm from the achromion end; it is obviously

lighter in color and structurally different from the older cuts. The older cuts appear to have been produced by a sawing motion, presumably in the course of disarticulation, with the blade force directed medially. The more lateral old cut appears to have been secondarily enlarged by rodent gnawing.

The left rib, probably rib #8, (FS 741: Trench 8 Unit 1 Level 7; floor context; Poolset 75) appears to be that of an older prepubescent human child. It has the pronounced "elbow" inflexion characteristic of human ribs but not those of artiodactyls or carnivores. It is the same "cooked" color as the clavicle and it is not root-etched. It lacks both the head and the costal articulator - both seem to have been removed before deposition by the usual Anasazi and Mogollon technique of scoring with a stone knife and snapping the element. The distal scoring cut was made on the exterior surface. The proximal cut was made from inside the chest cavity. An additional cut is present on the distal apex of the "elbow" inflexion. It appears to have been a piercing cut between this rib and the adjacent inferior rib, perhaps from an arrow, knife, or spear. Several very small cutting or scraping marks appear to be present on the medial surface of the midshaft - these are oriented cranio-caudally.

Previous studies of human remains from Gallinas Springs (Wycoff n.d.; Sheldon n.d.) have indicated the presence in several individuals of traumatic injuries, some probably fatal. Also reported are odd patterns of partial disarticulation which may be related to mutilation of dead enemies, secondary burial mortuary practices of the Gallinas Mountain phase people of LA 1178, or actual ceremonial or famine-related cannibalism.

The recent influx of reliable reports of unambiguous examples of mass Puebloan cannibalism from the Zuni, Hopi, and Mesa Verde-Hovenweep-Dolores area (Tim White, personal communication, 1989; Paul Nickens, personal communication, 1988; Bertram 1990, in prep b; L. C. Hammack, personal communication, 1990; also cf. Morris 1939:75; Olson 1966; Flinn, et al. 1976; Turner II 1989; Nickens 1975; Wiseman 1975) strongly suggests that these materials (from 1974, 1977, and 1987) should all be extensively restudied together with emphasis on perimortem and early postmortem bone modifications.

Chapter 10

ORNAMENTS AND "CEREMONIAL" OBJECTS

by Jack B. Bertram

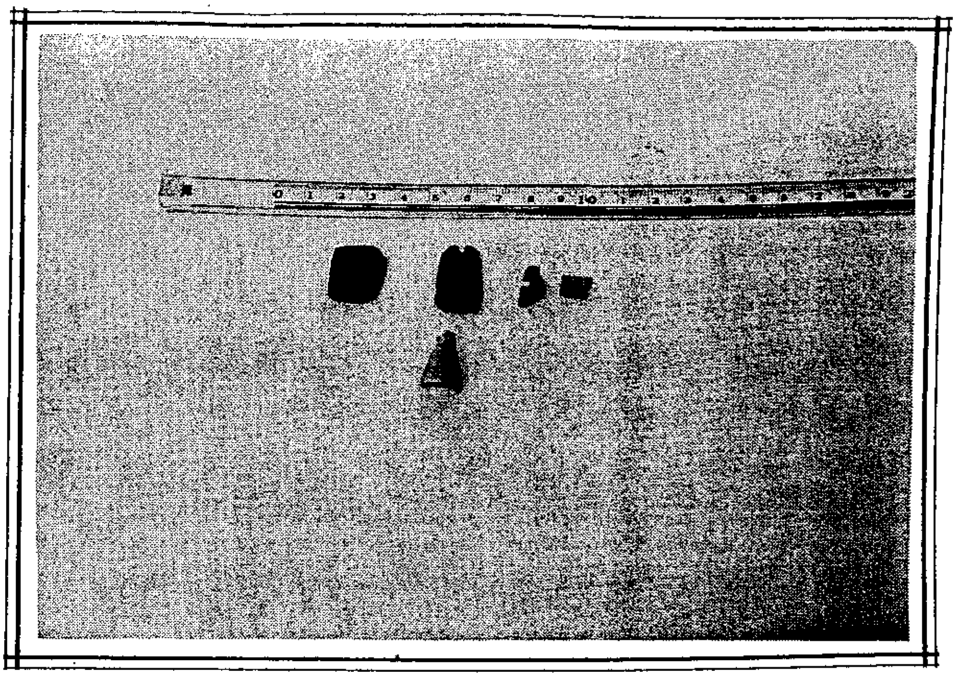
A total of four or five non-bone ornamental objects and one enigmatic (and hence "ceremonial"?) item were recovered in the 1987 excavations at LA 1178. Of these, one is of red-dog shale or tabular hematite ore, one is of calcite, travertine, or other alabaster-like material, one is of hematite ore, one is of a peculiar whitish amorphous material which resembles bleached malachite or turquoise, and two are of shell. With one exception, they all came from Trenches 8, 9, and 10.

In Trench 3, Unit 2, Level 6 (FS 22; Poolset 2) was found a conical bell-bead worked from half of a conical or ovoid seashell, tentatively identified as *Conus* sp. (Lord, personal communication, 1990). This item is incomplete; the outer flange of the shell is missing. It has been sawn and ground transversely at a distance of 7 mm from one end to produce a suspension hole. The open end, produced by cutting the shell in half equatorially, is also polished. The object (Photo 10-1a) is 21 mm long and 13 mm in diameter.

In Trench 8, Unit 1, Level 3 (FS 728; Poolset 71 or 72) was found a shell pendent fragment. Lord (personal communication, 1990) considered this piece to be most consistent with freshwater musselshell, but could not rule out abalone shell. The piece was drilled from the *nacre* face (hole diameter 1.8 mm) and ground to shape externally. It had broken along a growth suture through the suspension hole (Photo 10-1c). Only one portion (15 x 7 x 1.5 mm) was recovered.

Also in Trench 8, Unit 2, Level 2 (FS 720; Poolset 71) was found a curious object (Photo 10-2) of banded calcite, alabaster, or aragonite (mildly reactive in cold acid). It is cylindrical/conical in shape, tapering to a conical point at one end, and tapering to a blunt rounded point at the other end. It is 102 mm long and 11 mm in greatest diameter. The shaft is not straight, but is curved through about 12° of arc. It was carved from a blank cut or split along the axis of the individual crystals and perpendicular to the planes of bedding of the crystal strata, producing a banded appearance; over 75 bands can be recognized. This object appears to fall into the category of banded calcite "rod-fetishes" discussed for the Little Colorado and southern San Juan Basin regions by Gladwin (1945), Hough (1914), Judd (1954), Woodbury (1954), and others. Similar objects are reported from the Zuni area (Stevenson 1907), where they were interpreted by Zuni informants as 'special prayer sticks' used in rainmaking ceremonies.

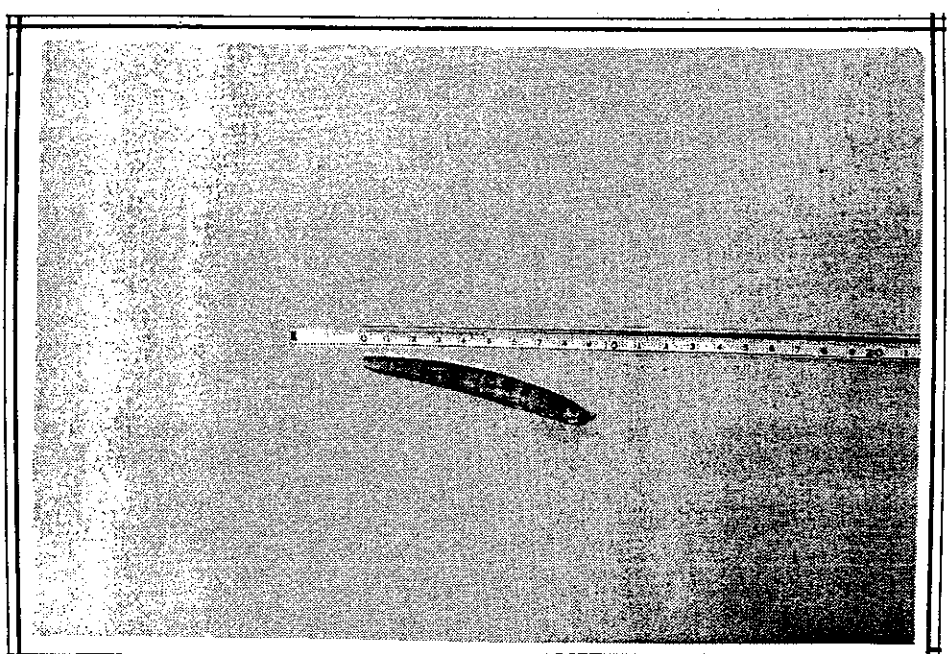
Photo 10-1.



A B C D
E

A: FS 335; Hematite pendent or crayon. B: FS 846; "Red Dog" shale pendent. C: FS 728; Shell pendent fragment. D: FS 866; Pendent half, of unknown material. E: FS 22; ref. *Conus* sp. bell bead.

Photo 10-2



FS 720; Alabaster prayer stick or effigy.

In Trench 10, Unit 2, Level 7 (FS 846; Poolset 81) was found a small rounded-rectangular pendent (Photo 10-1b) of polished red hematitic tabular siltstone or "red-dog" (coal seam-burned) shale, 25 x 14 x 1.6 mm in size. The object was chipped to shape, polished on at least one face, and drilled for suspension near one end. The hole was drilled using a conical bit. It is 2 mm in diameter. Most of the polished face and all of the back surface have exfoliated away and were not recovered. Pendants of this sort are common in Anasazi, Mogollon, and Piro sites.

Also in Trench 10, Unit 2, Level 10 (FS 866; Poolset 82) was found a small rectangular groundstone object (Photo 10-1d) which appears to be another pendent fragment. The object is 8 x 7 x 1.5 mm in dimension. It is of white amorphous calcite or some similar mineral, and it is highly polished on both faces and on three edges. The fourth edge is a break, which bisected a suspension drill hole 2 mm in diameter. The opposite edge was notched in two places, probably as part of an ornamental design. A similar object was described by Keller (1975:38) from the 1974 excavations; his item was a complete, "edge-serrated" pendent of "white chert-like material".

In Trench 9, Unit 3, Level 4 (FS 335; Poolset 32) was found a polished pendent blank or paint specimen, 20 x 18 x 2 mm in size. This rectangular-irregular object (Photo 10-1a) has pitted faces, which have been polished. All edges have been ground and polished. It was not drilled for suspension. The polish may be the result of manufacturing or of grinding away red paint.

Chapter 11

RECOMMENDATIONS

by Jack B. Bertram

Based on the great backlog of unpublished materials from previous work at LA 1178 and LA 1180, and on the findings of the FS/CGI efforts of 1987 and of 1989/1990, several recommendations can be advanced. These will be presented in the order of

1) recommendations arising from shortcomings of the present project

2) recommendations on completion of previous projects

3) recommendations arising from newly discovered or newly hypothesized patterns and trends.

It seems that Cibola NF should take the proactive lead in pursuing these recommended activities. However, with few exceptions, it is the view of the author that the Cibola role in future work at LA 1178/LA 1180 should be as facilitator rather than as a direct research organization. The research opportunities presented by the Gallinas Mountain phase sites are so unique and so great that they fall most appropriately into the realm of pure research, which should be carried out by a committed university or research foundation having access to long-term funding.

11.1 RECOMMENDED ADDITIONAL WORK FROM THE 1987-1990 FS/CGI PROJECT

1) No dendrochronological dates were obtainable from the FS/CGI collections. It appears that Green's (1974) dendro samples were never submitted. These should be submitted, even in the absence of a full analysis of their context.

2) At least two reconstructable vessels were found. One of these, an El Paso Polychrome large olla, should be reconstructed as the most economical way of determining whether the Trench 8A assemblage contains a single potdrop or represents a local concentration of use of <u>many</u> El Paso Polychrome vessels.

3) all three of the human bones found in the FS/CGI work bore evidence of post-mortem modification (mortuary ritual, mutilation, or cannibalism). Considering the hints of similar activities found in both field school projects and the rapidly burgeoning flow of recently discovered evidence of similar behavior in the northern San Juan area, the full human collections should be restudied by one analyst and a report published rapidly.

4) Efforts should be intensified to locate the mysterious "Vitrophyre A" obsidian source so important in this area, and to determine its hydration rate. Michel's Grants Ridge hydration rate determinations should be rerun, and the chemical characterization database for Grants Ridge extended.

5) Ground penetrating radar or similar non-intrusive techniques should be used in an attempt to produce a reliable architectural map of LA 1178 before any more excavation is done.

11.2 RECOMMENDATIONS FROM PREVIOUS PROJECTS

1) The Tainter-UNM field school monograph should be completed and published. Failing this, a symposium at a Pecos or Mogollon conference should be convened, with major analysts of the Green, Tainter, and Bertram projects as invited discussants.

2) The Green ceramics should be located and subjected to rough sort analysis, the results of which should be circulated.

3) Ceramic surface-analysis inventories should be carried out on the five other known Gallinas Mountain phase sites, all of which were inadequately characterized by Davis.

4) The lithic assemblage from Green's field school should be reviewed.

5) All possible bison bones in extant collections from LA 1178 should be restudied by a bison/elk expert.

11.3 FUTURE STUDIES

1) One or more dissertations should be undertaken by promising students to explore and quantify or reject the degree of trade isolation and spatial extent of the Gallinas Mountain phase. This effort should begin with a total review of all Cibola NF surveys and of surveys carried out on other federal lands within and adjacent to the Gallinas Mountains. It could result in the first total mapping of a local ethnic/residential/economic system ever produced in the Southwest. Perhaps there are small Gallinas Mountain phase sites.

2) One or two block excavations (perhaps 4 x 4 m) should be undertaken at the juncture of Structures I and III to recover a relatively undisturbed chronometrically dated sequence of Gallinas Mountain Phase ceramics, bones, and lithics. This should be used to evaluate the hypotheses that:

    a) Magdalena Black-on-white styles track the Tularosa/White Mountain style sequence

b) lithic procurement through time shifted between obsidian source areas, and

c) faunal subassemblages reflecting seasonal or activity-related cohunting sets are present, and that these cohunting sets change in composition and relative importance as the environment undergoes the drastic changes between AD 1100 and AD 1350 which have been documented elsewhere.

Chapter 12

REFERENCES CITED

Akins, N. J. and J. B. Bertram

1985 *The Archaeofaunas of Kin Nahasbas, a Bonitan Great House, and of Site 29SJ597 and 29SJ626, PII Pithouse Sites, located in Chaco Canyon National Historic Park.* Report submitted to Cultural Resource Division (National Park Service), UNM, Albuquerque, NM.

Anonymous

n.d. *Artifacts of Bone.* Ms. in E. Green's files on file at the Supervisor's office of the Cibola National Forest, Albuquerque, N.M.

Bailey, V.

1931 Mammals of New Mexico. U. S. Department of Agriculture. *North American Fauna* 53:1-412.

Berman, M. J.

1979 *Cultural resources overview, Socorro area, New Mexico.* USDA Forest Service, Southwestern Region, Albuquerque, and Bureau of Land Management, New Mexico State Office, Santa Fe. U.S. Superintendent of Documents, Washington, D.C.

Bertram, J. B.

1987a *Obsidian Hydration, Surface Scatters, and Archaic Puebloans: High Altitude Hunting Strategic Variaability and Late Large Points.* Minisymposium paper presented at the 1987 Pecos Conference, Pecos, New Mexico.

1987b *A Preliminary Report of Excavations in the South Block of Gallinas Springs Ruin (LA 1178), a Large PIII-IV Community on the Eastern Mogosazi Frontier.* Chambers Group, Inc., Albuquerque. Submitted to USDA Forest Service, Cibola National Forest.

1989a Archaeofaunal Analysis of Collections from Sites Excavated in the Course of Mitigation of Sites Along the Hovenweep Lateral Pipeline of the Four Corners Irrigation Project. Ms. in publication by Complete Archaeological Service Associates, Inc., Cortez, Colorado.

1989b Archaeofaunal Analysis of Sites LA 50363, LA 50364, and LA 50371 near Amborisa Lake, McKinely County, N.M. In *The Ambrosia Lake project: Archaeological Investigations of Three Small Sites Associated with the Southern Chacoan Outlier of Kin Nizhoni, McKinley County, New Mexico,* by T. G. Baugh, pp. 287-328. Department of Energy Uranium Mill Tailings Remedial Action Project Archaeological Report No. 53. Complete Archaeological Service Associates, Cortez, Colorado and MK-Ferguson Company, Albuquerque.

Bertram, J. B. (continued)

in prep a An Archaeofauna from a Pueblo I-Pueblo II Site in the North Hills Subdivision, Rio Rancho, New Mexico. Report to be published by Rio Grande Consultants, Inc., in cooperation with AMREP, Inc.

in prep b Faunal Materials and Probable Cannabilism from sites of Reach 1 of the Towaoc Main Canal, Four Corners Irrigation Project. In publication by Bureau of Reclamation and Complete Archaeological Service Associates, Cortez, Colorado.

in press Analysis of Archaeofaunas from National Forest Service Testing of Sites in the Atrisco Sector of the Elena Gallegos Land Exchange Project. Ms. in publication by Cibola National Forest

n.d. Further Analysis of Lithic Assemblages Collected in Mitigation of Five Sites of the National Forest Service Elena Gallegos Land Exchange, Atrisco Sector. Report prepared for Rio Grande Consultants, Inc. and on file there and with the author.

Bertram, J. B. (assembler)

1989 *Testing, Excavation, and Monitoring on 15 Prehistoric Sites Along the Albuquerque-Socorro-Arizona Border Segment of the AT&T Fiber Optics Communications Cable.* Chambers Group, Inc., Albuquerque. Prepared for AT&T Communications, Pleasanton, California.

Bertram, J. B., G. R. Burgett, and K. L. Lord

1989 *Cultural Resource Survey of an AT&T Fiber Optics Communication Cable: the Albuquerque to New Mexico/Arizona Border Segment.* Chambers Group, Inc., Albuquerque. Prepared for AT&T Communications, Pleasanton, California.

Bertram, J. B., J. Schutt, S. Kuhn, A. Earls, J Acklen, C. Carrillo, and J. Elyea

1987 *Report of Surface Collection and Testing at 18 Sites near Abiquiu Reservoir, Northern New Mexico.* 1 vol. and microfiche. Mariah Associates, Albuquerque. Submitted to U. S. Army Corp of Engineers, Albuquerque District, in final review.

Bertram, J. B., with Neale Draper

1982 The Bone from the Bis'sa'ani Community: a Sociotechnic Archaeofaunal Analysis", in *Bis'sa'ani: A Late Bonito Phase Community on Escavada Wash, Northwest New Mexico,* ed. Breternitz, Doyel, and Marshall. Navajo Nation Papers in Anthropology 41. NNCRMP, Window Rock, 5 volumes.

Binford, L. R. and J. B. Bertram

1977 Bone Frequencies and Attritional Processes. In *For Theory Building in Archaeology,* edited by L. R. Binford. pp. 77-153. Academic Press, New York.

Boas, F.
1928 *Keresan Texts.* American Ethnological Society Publication No. 8.

Brand, D.D.
1935 The Distribution of Pottery Types in Northwest Mexico. *American Anthropologist,* vol. 37, no.2.

Brew, J. O. and E. B. Danson
1948 The 1947 Reconnaissance and the Proposed Upper Gila Expedition of the Peabody Museum of Harvard University. *El Palacio* 23 (12), Santa Fe.

Bullard, W. R.
1962 The Cerro Colorado site and pithouse architecture in the southwestern United States prior to A.D. 900. *Papers of the Peabody Museum* 44(2), Cambridge.

Carlson, R. L.
1970 *White Mountain Redwares: a pottery tradition of East-Central Arizona and Western New Mexico.* University of Arizona Anthropological Papers 19.

Chambers Group, Inc.
1989 Technical Proposal RFQ R3-03-89-36 Gallinas Springs Site Stabilization Excavation Analysis. Submitted to the Cibola National Forest, Albuquerque. Submitted by Chambers Group, Inc., Albuquerque.

Chapman, R. C. and J. A. Schutt
1977 Methodology of Lithic Anaylsis. In *Archeological Investigations in Cochiti Reservoir, New Mexico.* Volume 2. Office of Contract Archeology, University of New Mexico, Albuquerque. Submitted to U.S. Army Corps of Engineers, Albuquerque District. Contract No. CX 7-2960151.

Clarke, D. L.
1968 *Analytical Archaeology.* Mathuen and Company, London.

Cordell, L.
1979 *A Cultural Resources Overview of the Middle Rio Grande Valley, New Mexico.* United States Department of Agriculture, Southwest Region, Albuquerque, and Bureau of Land Management, New Mexico State Office, Santa Fe, New Mexico.

Crabtree, D.
1972 *An Introduction to Flintworking.* Occasional Papers of the Idaho State University Museum, No. 28. Idaho State University Museum, Pocatello.

Danson, E. B.
1957 An archeological survey of west central New Mexico and east central Arizona. *Papers of the Peabody Museum of Archeology and Ethnology* 44(1).

Davis, E. L.
n.d. Field Notes from 1961 Season. Unpublished manuscript on file at National Park Service Office, Mesa Verde National Park, Colorado.

1964 *Anasazi mobility and Mesa Verde migrations.* Ph.D. dissertation, University of California, Los Angeles.

Davis, E. L. and J. H. Winkler
1959 A Late Mesa Verde Site in the Rio Puerco Valley. *El Palacio* 66(3):73-84.

1960 Progress Report Sites D125 (LA 8931) and D118 (LA 8932), Cibola National Forest, New Mexico. Ms. on file, Laboratory of Anthropology, Santa Fe.

Dittert, A. E.
1949 *The prehistoric population and architecture of the Cebolleta Mesa region, central western New Mexico.* M.A. thesis, department of Anthropology, University of New Mexico, Albuquerque.

1959 *Culture change in the Cebolleta Mesa region, New Mexico.* Unpublished Ph.D. dissertation, Department of Anthropology, University of Arizona, Tucson.

Dittert, A. E. and R. J. Ruppe
1951 The archaeology of Cebolleta Mesa: a preliminary report. *El Palacio* 58(4):116-129.

Ellis, F. H.
1974 Anthropology of Laguna Pueblo Land Claims, Docket #227, Claimants Ex. #92. A monograph in *Pueblo Indians III* (collected volumes, no editor). Garland Publishing Co., New York.

Elyea, J.
1987 The Qualacu Lithic Assemblage. In *Qualacu, Archaeological Investigation of a Piro Pueblo,* M.P. Marshall, editor. U.S. Fish and Wildlife Service, University of New Mexico, Office of Contract Archeology.

Flinn, L., C. G. Turner II, and A. Brew
1976 Additional Evidence for Cannibalism in the Southwest: the Case of LA 4528. *American Antiquity* 41(3):308-318.

Fowler, A. P.
1989 Ceramic Types of the Zuni Area. Draft Handbook preapred for NMAC Ceramic Worshop, Silver City, New Mexico.

Fowler, A. P., J. R. Stein, and R. Anyon
1987 *An Archaeological Reconnaissance of West-Central New Mexico: the Anasazi Monuments Project.* Submitted to the State of New Mexico, Office of Cultural Affairs, Historic Preservation Division.

Frisbie, T. R.
1971 Field report: the Newton Site, Hickman, Catron County, New Mexico. Paper presented at the Annual Pecos Conference.

1973 Field Report: the Newton Site, Catron County, New Mexico. *Awanyu* 1(4):31-36.

Gladwin, H. S.
1945 *The Chaco Branch: Excavations at White Mound and in the Red Mesa Valley.* Medallion Papers No. 33.

Green, E.
n.d *Analysis of Artifacts from Gallinas Springs Site.* Files from Department of Anthropology, Western Michigan University, in possession of J. Tainter.

1974 *Excavations at Gallinas Springs Site, Magdalena District, Cibola National Forest, New Mexico.* Progress Report, First Season, July-August, 1974. Department of Anthropology, Western Michigan University.

1975 Current Research: Projects and Progress; Gallinas Springs Archaeological Project. *Pottery Southwest*, 2(4), Albuquerque, New Mexico.

Harman, H. H.
1966 *Modern Factor Analysis.* 2nd ed. (revised). University of Chicago Press, Chicago.

Heinsch, L., J. S. Meyer, and K. L. Lord
1985 Lithics and Ground Stone. In *Archaeological Investigations of Three Sites Within the WIPP Core Area, Eddy County, New Mexico*, edited by Kenneth J. Lord and William E. Reynolds, pp. 125-150. Chambers Consultants and Planners, Albuquerque.

Hibben, F. C.
1949 The Pottery of the Gallina Complex. *American Antiquity* 14(3):194-202.

Hogan, P., J. M. Elyea, J. Enlow, A.P. Fowler, J. O'Hara, D. Rugge, and F. E. Wozniak
1985 *Prehistoric Settlement Patterns in West-Central New Mexico: The Fence Lake Coal Lease Surveys.* Office of Contract Archeology, University of New Mexico, Albuquerque.

Hough, W.
1914 *Culture of the Ancient Pueblos of the Upper Gila River Region, New Mexico and Arizona.* U.S. National Museum, Bulletin 87.

Jackson, K. C.
1970 *Textbook of Lithology.* McGraw Hill, Inc.

Jennings, J. D.
1968 *Prehistory of North America.* McGraw-Hill, New York.

Judd, N. M.
1954 *The Material Culture of Pueblo Bonito.* Smithsonian Miscellaneous Collections 124. Washington, D.C.

Kayser, D. W. and C. H. Carroll
1988 *Archeological Investigations in West-Central New Mexico: Volume 3: Report of the Final Field Season.* San Augustine Coal Area, Bureau of Land Management, Las Cruces District, Socorro Resource Area. Cultural Resource Series No. 5.

Keller, M. G.
1975 *An Analysis of the Stone Artifacts from Gallinas Springs, New Mexico.* Unpublished Master's thesis, Western Michigan University, Kalamazoo, Michigan.

Kelley, J. H.
1984 *The Archaeology of the Sierra Blanco Region of Southeastern New Mexico.* Report No. 74. Museum of Anthropology, University of Michigan, Ann Arbor.

Klein, J. J., C. Lerman, P. E. Damon, and E. K. Ralph
1982 Calibration of Radiocarbon Dates: Tables Based on the Consensus Data of the Workshop on Calibrating the Radiocarbon Time Scale. *Radiocarbon* 24(2):103-150.

Knight, T. L.
1980 Ceramic Analysis of Surface Samples from Sites in the Bajadan Community, WSMR. In *Archaeological Reconnaissance in White Sands National Monument,* Peter Eidenbach and Mark Wimberly, Human Systems Research, Inc.

1981 *The Ceramics of LA 1178, Gallinas Springs, New Mexico.* Jicarilla Archaeological Services, Dulce, New Mexico.

Knight, T. L. and A. R. Gomolak
1987 Magdalena Ceramic Manufacturing Tradition. *Pottery Southwest* 14(3):1-3.

Lehmer, D. C.

1948 *The Jornado Branch of the Mogollon.* University of Arizona, Social Sciences Bulletin No. 17. Tucson.

Lekson, S. H.

1986 Mesa Verde-like ceramics near T-or-C, New Mexico. *Pottery Southwest* 13(4):1-3.

1987 *Archaeological Reconnaissance of the Rio Grande Valley, Sierra County, New Mexico.* New Mexico State Historic Preservation Division, Contract 35-84-8317.06.

Lord, K. J., N. S. Cella and J. B. Bertram

1987 *Archaeological and Historical Research at the Abiquiu Dam Reservoir, Rio Arriba County, New Mexico.* 3 vols. Chambers Group, Inc., Albuquerque. Submitted to U.S. Army Corps of Engineers, Albuquerque District, Albuquerque. Contract No. DACW47-84-C-0032. Final Draft.

Marshall, M. P.

1973 Ceramic Descriptions. In *Technical Manual: 1973 Survey of the Tularosa Basin,* Human Systems Research, Tularosa, NM.

1987 *Qualacu, Archaeological Investigation of a Piro Pueblo.* U.S. Fish and Wildlife Service, University of New Mexico, Office of Contract Archeology.

Marshall, M. P. and H. J. Walt

1984 *Rio Abajo: Prehistory and History of a Rio Grande Province.* New Mexico Historic Preservation Program, Santa Fe.

Martin, P. S. and F. Plog

1973 *The archeology of Arizona.* Doubleday, New York.

Martin, P. S. and J. B. Rinaldo

1950 Sites of the Reserve Phase: Pine Lawn Valley, Western New Mexico. *Fieldiana: Anthropology* 38(3). Chicago Natural History Museum, Chicago.

Martin, P. S., J. B. Rinaldo, E. Bluhm, H. C. Cutler, and R. Grange, Jr.

1952 Mogollon Cultural Continuity and Change: The Stratigraphic Analysis of Tularosa and Cordova Caves. *Fieldiana: Anthropology* 40, Chicago Natural History Museum, Chicago.

McGarry, T. E.

1975 Cibola Corrugated: A Proposed New Pottery Type from the Southwest. Unpublished manuscript, Wichita State University.

McGregor, D.
n.d. *An Analysis of the Faunal Remains from the Gallinas Springs Site, New Mexico.* Ms. in E. Green's files in possession of J. Tainter.

McGimsey, C. R., III
1951 Peabody Museum Upper Gila Expedition-Pueblo Division, Preliminary Report, 1950 Season. *El Palacio* 58(10). Santa Fe.

1980 Marianna Mesa: Seven prehistoric settlements in west-central New Mexico. *Papers of the Peabody Museum of Archeology and Ethnology* 72. Harvard University, Cambridge.

Mera, H. P.
1933 *A Proposed Revision of the Rio Grande Glaze Paint Sequence.* Laboratory of Anthropology Technical Series Bulletin No. 5. Santa Fe.

Morris, Earl H.
1939 *Archaeological Studies in the La Plata District.* Carnegie Institute, Washington, D.C.

Nickens, P. R.
1975 Prehistoric Cannibalism in the Mancos Canyon, Southwestern Colorado. *Kiva* 40(4):283-293.

O'Laughlin, T. C.
n.d. Faunal Remains. In *Social and Economic Organization of Gallinas Springs Pueblo, A Report on the 1977 Excavations,* J.A. Tainter, editor. Draft report.

Olson, A. P.
1966 A Mass Secondary Burial from Northern Arizona. *American Antiquity* 31(6):822-826.

Pippin, L. C.
1987 *Prehistory and Paleoecology of Guadalupe Ruin, New Mexico.* University of Utah Anthropological Papers Number 112. Desert Research Institute, Reno, Nevada.

Rinaldo, J. B.
1959 Foote Canyon Pueblo, Eastern Arizona. *Fieldiana Anthropology* 49(2), Chicago Natural History Museum, Chicago.

Rinaldo, J. B. and E. A. Bluhm
1956 Late Mogollon Pottery Types of the Reserve Area. *Fieldiana Anthropology* 36(7). Chicago Natural History Museum, Chicago.

Schaafsma, Curtis F.
1969 The Pottery of Las Madres. Unpublished manuscript on file at UNM and Laboratory of Anthropology, Santa Fe.

Shackley, M. S.
1988 Sources of Archaeological Obsidian in the Southwest: an Archaeological, Petrological, and Geochemical Study. *American Antiquity* 53(4):752-772.

Sheldon, C. M.
n.d. Human Osteological Remains. In *Social and Economic Organization of Gallinas Springs Pueblo, a Report on the 1977 Excavations*, by J. Tainter. Draft Ms. on file, Cibola National Forest.

Shelley, P. H., J. L. Montgomery, and K. Bowman
1988 Obsidian Sourcing and Hydration Studies. In *The Border Star 85 Survey: Toward an Archeology of Landscapes*, edited by T. J. Seaman, W. H. Doleman, and R. C. Chapman. Prepared for the U. S. Army Corps of Engineers, Ft. Worth District. Prepared by Office of Contract Archeology, University of New Mexico.

Smith, W.
1950 Preliminary Report of the Peabody Museum Upper Gila Expedition, Pueblo Division, 1949. *El Palacio* 57(12):392-399.

1973 The Williams Site, a Frontier Mogollon Village in West-Central New Mexico. *Papers of the Peabody Museum of Archaeology and Ethnology* 39(2). Harvard University, Cambridge.

Smith W., R. B. Woodbury, and N. F. S. Woodbury
1966 The excavation of Hawikuh by Frederick Webb Hodge, Report of the Hendricks-Hodge Expedition 1917-1923. *Contributions from the Museum of the American Indian, Heye Foundation* 20. New York.

Stevenson, M. C.
1907 The Zuni Indians. *Twenty-third Annual Report of the Bureau of American Ethnology*. Reprint by Rio Grande Press, Glorieta, New Mexico.

Sudar-Laumbach, T.
1983 Ceramic Artifacts. In *The Black Range Survey*, Cultural Resources Management Department, New Mexico State University, Las Cruces.

Sundt W.
1975 Query: Sundt to Warren *Pottery Southwest* 2(2):6

Tainter, J. A.
n.d *Social and Economic Organization of Gallinas Springs Pueblo, A Report on the 1977 Excavations.* Draft report.

1980 Symbolism, interaction and cultural boundaries: The Anasazi-Mogollon transition zone in west-central New Mexico. A paper presented at the first annual Mogollon Conference, New Mexico State University, Las Cruces.

Turner, C. G. II
Teec Nos Pos: More Possible Cannibalism in Northeastern Arizona. *Kiva* 54(2):147-152.

Tichy, M. F.
1945 The Distribution of Early Elbow Pipes. *El Palacio* 52(4):70-73.

U.S. Department of Agriculture, Forest Service
1987 *Documentation for Determination of No Adverse Effect for Stabilization/Flood Project of the Gallinas Springs Ruin.* Submitted to the Advisory Council on Historic Preservation, New Mexico State Historic Preservation Office.

Vierra, B.
1985 Lithic Analysis Methodology. On file, Laboratory of Anthropology, Museum of New Mexico, Santa Fe, New Mexico.

Warren, A. H.
1974 A Southern Variety of McElmo Black-on-white. *Pottery Southwest* 1(2)1974:4.

1975 Response: Warren to Sundt. *Pottery Southwest* 2(2):6-7.

Watson, P. J., S. A. LeBlanc, C. Redman
1980 Aspects of Zuni Prehistory: Preliminary Report on Excavations and Survey in the El Morro Valley of New Mexico. *Journal of Field Archaeology* 7:201-218.

Wimberly, N. and P. Eidenbach
1980 *Reconnaissance study of the archaeological and related resources of the lower Puerco and Salado drainages, central New Mexico.* Human Systems Research, Tularosa.

Wiseman, R. N.
1975 *The Black Rock Project: Archaeological Excavations on the Zuni Indian Reservation, McKinley County, N.M.* Museum of New Mexico Division of Anthropology, Archaeological Research Papers No. 3.

1986 *An initial study of the origins of Chupadero Black-on-white.* Technical Note 2, Albuquerque Archaeological Society, Albuquerque.

Woodbury, R. B.
1954 *Prehistoric Stone Implements in Northeastern Arizona.* Peabody Museum of American Archaeology and Ethnology 34.

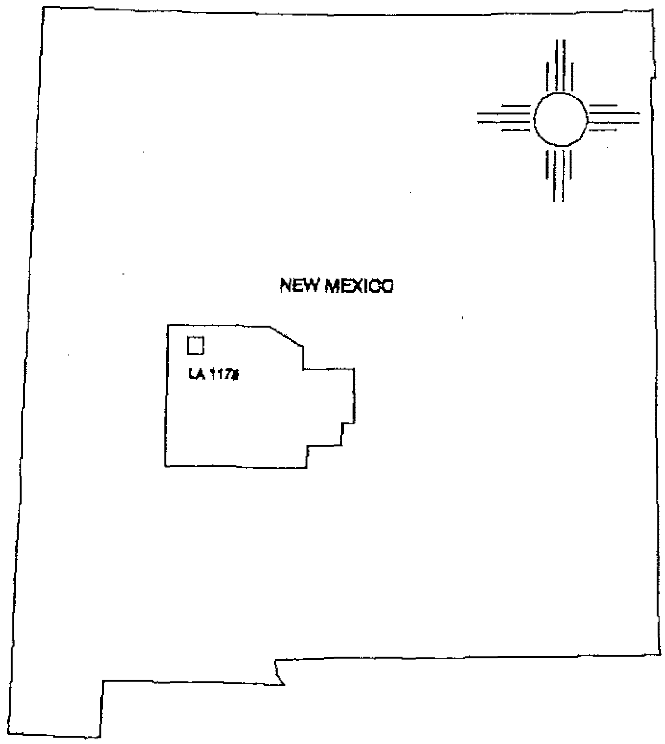
Woodbury, R. B. and N. F. S. Woodbury
1966 Decorated Pottery of the Zuni Area. In *The Excavation of Hawikuh* by Frederick Webb Hodge: Report of the Hendricks-Hodge Expedition, by Watson Smith, Richard B. Woodbury, and Nathalie F.S. Woodbury, pp. 302-336. *Contributions from the Museum of the American Indian*, Heye Foundation 20, New York.

Wyckoff, L. M.
n.d. Gallinas Springs Burials. Ms. in E. Green's files in possession of J. Tainter.

APPENDIX A

MACROBOTANICAL ANALYSIS

POLLEN AND PLANT MACROFOSSIL ANALYSIS OF LA 1178, GALLINAS SPRINGS



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INTRODUCTION

Pollen and plant macrofossil samples were recovered from the Gallinas Springs site (LA 1178), located in the Gallinas Mountains region of Socorro County, New Mexico. Site LA 1178 is a late PIII habitation site and is thought to date to A.D. 1200-1325. The excavation of this site was conducted by Chambers Group Inc. of Albuquerque New Mexico in order to mitigate the effects of stabilization of the ruins for the U.S. Forest Service, Cibola National Forest. The botanical remains were sent for analysis to the Castetter Laboratory for Ethnobotanical Studies at the University of New Mexico.

METHODS AND MATERIALS

Pollen Samples

Ten samples were submitted for analysis to the Castetter Laboratory for Ethnobotanical Studies. Three of these consisted of pollen washes from selected artifacts and the remaining seven samples were soil samples taken for pollen analysis.

Prior to extraction of the pollen washes, the surfaces were washed with distilled water into a laboratory beaker. A second wash with dilute (10%) HCl was followed by a final wash with distilled water. From this point, the sample was treated as described below. A single tablet of concentrated *Lycopodium* spores was added to each sample for later computation of pollen concentration.

For each soil sample, 30 ml of soil were sub-sampled and prior to chemical extraction, two tablets of concentrated *Lycopodium* spores were added to each sub-sample. This was done to permit the later calculation of pollen concentration values and secondly, to serve as a marker against accidental destruction of the pollen assemblage by laboratory methods. The samples were initially treated with 35% HCl to remove carbonates. The residues were then treated with cold 70% HF overnight. The residues were then treated with a heavy density separation using Zinc Chloride (S.G. 1.99-2.00) in order to remove other inorganic particles. The lighter, organic portion was removed by pipet, concentrated, and subjected to a short acetolysis (Erdtman, 1960) of 10 minutes to remove extraneous organic matter. The residue was dehydrated and stained with safranin and transferred to a mounting medium of 1000 centistoke silicon oil using methanol.

A drop of the polliniferous residue was mounted on a microscope slide for examination. The slide was examined using 250X magnification and 1 mm transect intervals. A minimum count of 200 grains/sample was attempted for each sample as suggested by Barkley (1934). As recommended by Brookes and Thomas (1967) either one-half or full slides were counted to minimize the effects of non-random distribution. For these preliminary scans, after a single slide was examined, counting was terminated if 50 or more *Lycopodium* spores had been counted, otherwise a second slide was examined. This was done to estimate pollen concentration values in the sediments in order to prepare recommendations for further examination.

Pollen concentration values were computed for each sample using the following formula:

$$PC=\frac{K*\Sigma_p}{\Sigma_L*S}$$

Where: PC = Pollen Concentration
K = *Lycopodium* spores added
$\sum_p$ = Fossil pollen counted
$\sum_L$ = *Lycopodium* spores counted
S = Sediment volume

Statistically, the concentration values provide a more reliable estimate since a minimum number of marker grains were counted rather than relying upon the fossil grains. The percentage calculations, since they are based on counts less than 200 grains should be viewed with caution.

Plant Macrofossil Samples

These samples had been submitted separately and contained flot samples, samples for species identification, and samples submitted for a determination of potential for dendrochronological dating. The flot samples were initially processed by personnel at Chambers Group; each screen size was examined and the material identified by comparison to the reference collections contained in the Castetter Laboratory. Samples submitted for taxon identification primarily consisted of *Zea mays* cobs, Pinon hulls, and intrusive pyrenes of Peach (*Prunus* sp.). Charcoal and the dendro samples were examined using the snap method of Leney and Casteel (1975). This method exposes a fresh transverse section of the charcoal which permits rapid identification. Often this is necessary as the vessels and tracheids of the woods recovered from archaeological contexts are filled with soil particles obscuring those characters necessary for identification. Identification was aided by a computer assisted wood identification program (GUESS) published by North Carolina State University. Wood anatomical characters were coded and compared with the data base of over 3000 wood species to provide a short list of possible taxa. Wood reference specimens of these taxa were examined and the final determination was based on the reference material contained in the Castetter Laboratory.

RESULTS

Palynological Samples

A total of 10 samples have been analyzed and three of the samples consisted of pollen washes (Tables A-1 and A-2). FS 234 was a palette and contained the smallest quantity of pollen. Only background type pollen was recovered from this sample. The wash from the

Table A-1

POLLEN CONCENTRATION VALUES, LA 1178, GALLINAS SPRINGS RUIN

								Pollen Washes		
FS Number	262	630	631	643	668	671	224	234	670	1601
Unit	7-2	7-2	7-2	7-2	5-2	7-2	5-2	5-2	5-2	3-2
Trench		lv 7	lv 7	lv 7A	lv 10	lv 10	lv 9	lv 11		lv 3
Type	floor	fl. cont.	fl. cont.	floor mat	firebox	feat 5.2	floor		firebox	cer in wall
CLES Num.	90058	90056	90057	90055	90054	90053	90120	90019	90020	90018
Pinus hap.	0	32	0	0	0	0	0	0	0	0
Pinus dip.	0	0	20	0	0	0	0	0	0	0
Pinus undiff.	89	191	317	159	73	0	117	0	0	0
Picea	0	32	20	0	0	0	0	0	0	0
Quercus	0	0	40	0	0	0	0	0	0	0
Populus	0	0	20	0	0	0	0	0	0	0
Salix	0	95	59	40	0	0	39	0	0	0
Solanaceae	0	0	20	13	0	0	91	0	0	0
Polygonum	22	0	20	0	0	0	0	0	0	0
Portulacaceae	0	0	20	0	0	0	0	0	0	0
Sarcobatus	0	95	40	0	0	0	0	0	0	0
Poaceae	89	858	1010	106	165	0	221	0	0	0
Cheno am	0	1748	3445	518	457	450	519	0	26	664
Cheno am frags.	0	0	0	40	0	71	0	0	13	0
Asteraceae h.s.	67	222	277	93	37	24	65	0	0	0
Asteraceae l.s.	45	127	297	27	37	0	169	0	0	0
Artemisia	0	0	20	0	0	0	974	0	0	0
Liguliflorae	0	0	40	0	0	0	0	0	0	0
Platyopuntia	0	318	158	13	0	0	0	0	0	0
Cylindropuntia	0	32	139	0	0	0	0	0	0	0
Cactaceae	45	64	0	0	110	0	0	0	0	0
Cyperaceae	0	0	20	0	0	0	13	0	0	0
Typha angustifolia	0	0	59	0	0	0	0	0	0	0
Typha latifolia	0	0	79	0	0	0	0	0	0	0
Unknown	0	64	40	0	37	24	65	0	0	0
Indeterminate	201	922	554	226	55	0	351	0	0	0
Cleome	0	0	20	0	0	0	0	0	0	0
Zea mays	0	2829	3762	146	165	213	0	0	0	0
Other	0	0	0	0	0	592	0	83	66	310
Marker	54	38	61	91	66	51	93	25	47	52
pollen sum	25	240	530	104	62	58	202	2	8	22
concentration	559	7628	10493	1380	1135	1373	2623	83	105	973

Table A-2

POLLEN FREQUENCIES, LA 1178, GALLINAS SPRINGS RUIN

'S Number	262	630	631	643	668	671	224
Jnit	7-2	7-2	7-2	7-2	5-2	7-2	5-2
:rench		lv 7	lv 7	lv 7A	lv 10	lv 10	lv 9
:ype	floor	fl. cont.	fl. cont.	floor mat	firebox	feat 5.2	floor
'*inus* hap.	0.000	0.004	0.000	0.000	0.000	0.000	0.000
'*inus* dip.	0.000	0.000	0.002	0.000	0.000	0.000	0.000
'*inus* undiff.	0.160	0.025	0.030	0.115	0.065	0.000	0.045
'*icea*	0.000	0.004	0.002	0.000	0.000	0.000	0.000
'*uercus*	0.000	0.000	0.004	0.000	0.000	0.000	0.000
'*opulus*	0.000	0.000	0.002	0.000	0.000	0.000	0.000
'*alix*	0.000	0.013	0.006	0.029	0.000	0.000	0.015
olanaceae	0.000	0.000	0.002	0.010	0.000	0.000	0.035
olygonum	0.040	0.000	0.002	0.000	0.000	0.000	0.000
ortulacaceae	0.000	0.000	0.002	0.000	0.000	0.000	0.000
arcobatus	0.000	0.013	0.004	0.000	0.000	0.000	0.000
oaceae	0.160	0.113	0.096	0.077	0.145	0.000	0.084
heno am	0.000	0.229	0.328	0.375	0.403	0.328	0.198
heno am frags.	0.000	0.000	0.000	0.029	0.000	0.052	0.000
steraceae h.s.	0.120	0.029	0.026	0.067	0.032	0.017	0.025
steraceae l.s.	0.080	0.017	0.028	0.019	0.032	0.000	0.064
rtemisia	0.000	0.000	0.002	0.000	0.000	0.000	0.371
iguliflorae	0.000	0.000	0.004	0.000	0.000	0.000	0.000
latyopuntia	0.000	0.042	0.015	0.010	0.000	0.000	0.000
ylindropuntia	0.000	0.004	0.013	0.000	0.000	0.000	0.000
actaceae	0.080	0.008	0.000	0.000	0.097	0.000	0.000
'peraceae	0.000	0.000	0.002	0.000	0.000	0.000	0.005
ha angustifolia	0.000	0.000	0.006	0.000	0.000	0.000	0.000
ha latifolia	0.000	0.000	0.008	0.000	0.000	0.000	0.000
known	0.000	0.008	0.004	0.000	0.032	0.017	0.025
determinate	0.360	0.121	0.053	0.163	0.048	0.000	0.139
leome	0.000	0.000	0.002	0.000	0.000	0.000	0.000
a mays	0.000	0.371	0.358	0.106	0.145	0.155	0.000
her	0.000	0.000	0.000	0.000	0.000	0.431	0.000
arker	54	38	61	91	66	51	93
ollen sum	25	240	530	104	62	58	202
ncentration	1022	13943	19182	2523	2074	2511	2623

Table A-2 (continued)

POLLEN FREQUENCIES, LA 1178, GALLINAS SPRINGS RUIN

	Pollen Washes		
FS Number	234	670	1601
Unit	5-2	7-2	3-2
Locus	lv 11		strat 3
Type		firebox	cer. in wal
Pinus hap.	0.000	0.000	0.000
Pinus dip.	0.000	0.000	0.000
Pinus undiff.	0.000	0.000	0.000
Picea	0.000	0.000	0.000
Quercus	0.000	0.000	0.000
Populus	0.000	0.000	0.000
Salix	0.000	0.000	0.000
Solanaceae	0.000	0.000	0.000
Polygonum	0.000	0.000	0.000
Portulacaceae	0.000	0.000	0.000
Sarcobatus	0.000	0.000	0.000
Poaceae	0.000	0.000	0.000
Cheno am	0.000	0.250	0.682
Cheno am frags.	0.000	0.125	0.000
Asteraceae h.s.	0.000	0.000	0.000
Asteraceae l.s.	0.000	0.000	0.000
Artemisia	0.000	0.000	0.000
Liguliflorae	0.000	0.000	0.000
Platyopuntia	0.000	0.000	0.000
Cylindropuntia	0.000	0.000	0.000
Cactaceae	0.000	0.000	0.000
Cyperaceae	0.000	0.000	0.000
Typha angustifolia	0.000	0.000	0.000
Typha latifolia	0.000	0.000	0.000
Unknown	0.000	0.000	0.000
Indeterminate	0.000	0.000	0.000
Cleome	0.000	0.000	0.000
Zea mays	0.000	0.000	0.000
Other	1.000	0.625	0.318
Marker	25	47	52
pollen sum	2	8	22
concentration	1766	3758	9340

ceramic sherd found in the wall of Trench 3 (FS 1601) contained only Cheno-am pollen, and the wash from the firebox in Trench 7 (FS 670) contained Cheno-am pollen and Cheno-am anther fragments. The pollen concentration values for these three samples are extremely small, less than 1,000 grains per cm^2. Thus, no further analysis of these pollen samples is warranted.

Of the remaining 7 samples, three (FS 630, 631, and FS 224) contained large quantities of pollen and produced a statistically valid pollen sum greater than 200 grains. It is interesting to note that all 3 samples originated from a floor contact position and contained a rather high species diversity. Samples from the Trench 7 Firebox (FS 671), feature 5.2 (FS 668) and a Trench 5 floor/subfloor sample (FS 262) all contained relatively little pollen (< 1400 grains/ml of soil). The majority of the pollen recovered was background type, although both 668 and 671 did contain several grains of *Zea mays* pollen. Although FS 262 was recovered from a floor context, it contained the least amount of pollen and a significant percentage (36%) was indeterminate.

FS 643 was a sample of floor tiles from Trench 7. Ten percent of the pollen consisted of *Zea mays* pollen, with rather small percentages of background pollen types such as *Pinus*. Solanaceae pollen was present in 1% frequency and *Salix* at 3%. Almost 3% of the pollen was composed of Chenoam anther fragments or clumps.

Macrobotanical Samples

Results of the macrobotanical analysis are presented in Table A-3. Material from FS 1601 was removed from the surface of ceramic sherd which was located in a trench wall. Unfortunately, no plant remains were recovered and only a small quantity of charred dust-like material was present from this sample.

Quite a large degree of diversity of material present was recovered from the other macrobotanical samples submitted. Several types of charcoal including two species of *Pinus, Juniperus, Populus,* and *Prosopis,* were recovered and identified. Several examples of pyrenes of *Prunus* sp. (peach) were recovered; based on size, degree of preservation (excellent), and the lack of any evidence of charring, these are thought to be modern intrusions. These specimens appeared to be exactly identical to fresh peach pyrenes. The pyrene is the stony endocarp which contains the embryo of the seed. Minor remains which were scattered throughout the site included bone chips, pot sherds, obsidian flakes, quartz/gypsum crystal, rock, and a small piece of paper with typing which was obviously intrusive. In addition, Pinon hulls and corn remains were quite common. Figure A-1 presents the spatial distribution of many of these remains.

Table A-3

MACROBIOLOGICAL REMAINS, LA 1178, GALLINAS SPRINGS RUIN

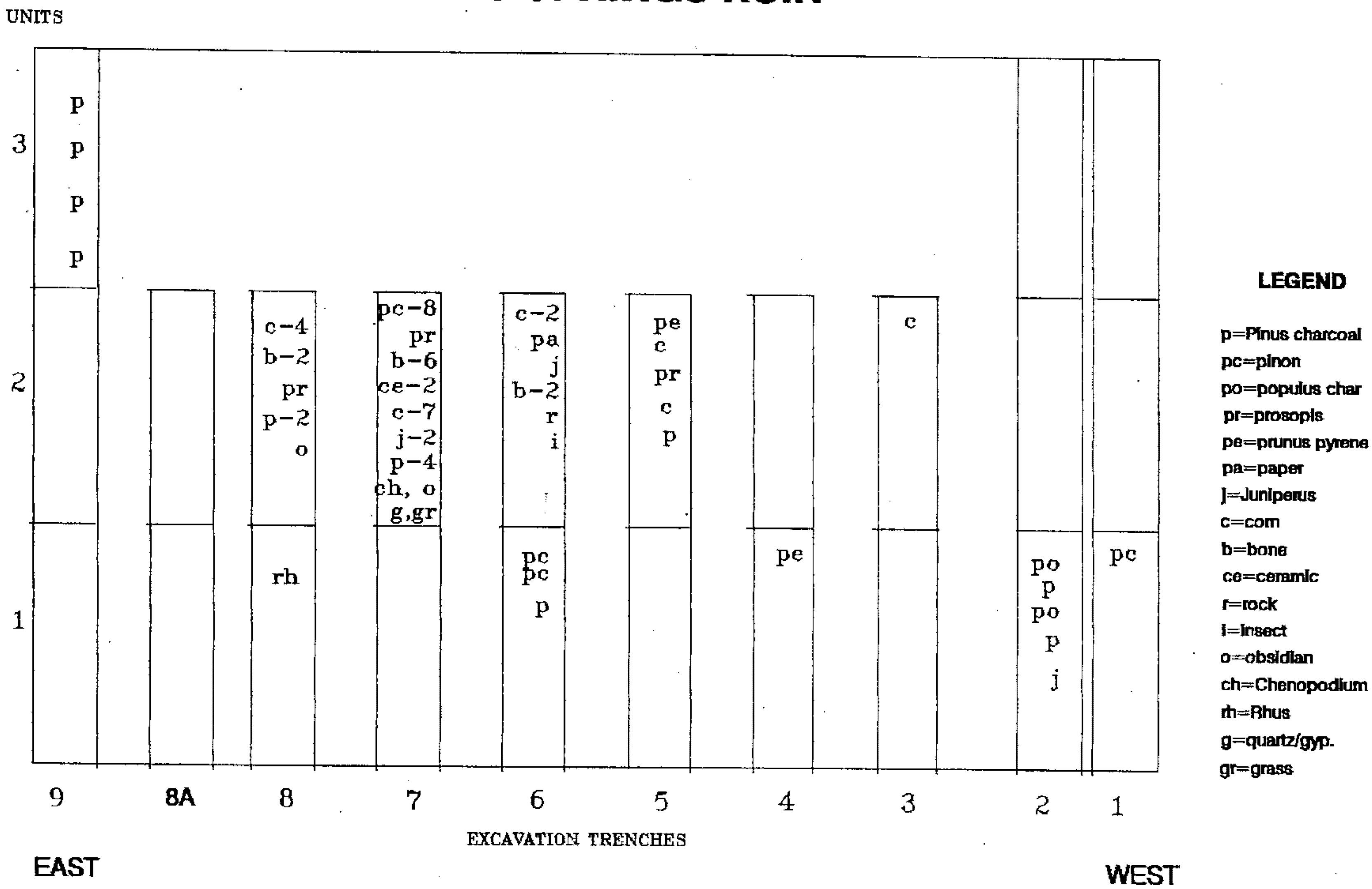
FS #	Trench #	Unit #	Level #	Feature	Depth	screen	Identification
921	Trench 1	Unit 1	Level 8	pre-occup.	125-145 cm		*Pinus edulis* cone-young
1123	Trench 2	Unit 1	Level 5	lower 1/2			*Populus* charcoal
1123	Trench 2	Unit 1	Level 5	lower 1/2			*Pinus* charcoal
1159	Trench 2	Unit 1	Level 11	upper fill	150-160 cm		*Populus* charcoal
1159	Trench 2	Unit 1	Level 11	upper fill	150-160 cm		*Juniperus* charcoal
1159	Trench 2	Unit 1	Level 11	upper fill	150-160 cm		*Pinus* charcoal
1601	Trench 3	Unit 2	Strat 3	Ceramic in trench profile			Charred dust adhering to surface
53	Trench 3	Unit 2	Level 10		90-100 cm		*Zea mays* cob 8 rowed
150	Trench 4	Unit 1	Level 10		160-170 cm		*Prunus* sp pyrene modern
205	Trench 5	Unit 5-1&5-2		sfc stripping		1/4"	*Prunus* sp pyrene modern
221	Trench 5	Unit 2	Level 8				*Prosopis* charcoal
221	Trench 5	Unit 2	Level 8				*Pinus* charcoal
221	Trench 5	Unit 2	Level 8				*Zea mays* cob 10 rowed
221	Trench 5	Unit 2	Level 8				*Zea mays* cob (2) 8 rowed
581	Trench 6	Unit 1	Level 10	pre-occup.	170-180 cm		*Pinus edulis* seed uncharred
582	Trench 6	Unit 1	Level 10	pre-occup.	170-180 cm		*Pinus* charcoal
570	Trench 6	Unit 1	Level 7	sub-floor	140-150 cm		*Pinus edulis* seed
534	Trench 6	Unit 2	Level 8/9	Feat 3.1 room fill	76-90 bd	fine	*Juniperus* charcoal
534	Trench 6	Unit 2	Level 8/9	Feat 3.1 room fill	76-90 bd	w5	Bone chips
534	Trench 6	Unit 2	Level 8/9	Feat 3.1 room fill	76-90 bd	w5	paper w/ typing
534	Trench 6	Unit 2	Level 8/9	Feat 3.1 room fill	76-90 bd	fine	insect carapace
534	Trench 6	Unit 2	Level 8/9	Feat 3.1 room fill	76-90 bd	1/4"	Bone
534	Trench 6	Unit 2	Level 8/9	Feat 3.1 room fill	76-90 bd	1/8:	*Zea mays* cupule
534	Trench 6	Unit 2	Level 8/9	Feat 3.1 room fill	76-90 bd	1/4"	rock
556	Trench 6	Unit 2	Level 1-12	fill in wall	sfc-1.2m		*Zea mays* cob 10 rowed
651	Trench 7	Unit 2	Level 8	sub-floor			*Zea mays* 4 cobs 10 rowed
667	Trench 7	Unit 2	Level 9	Feat 5.2	Firebox	1/4"	charred bone
667	Trench 7	Unit 2	Level 9	Feat 5.2	Firebox	1/4"	charred bone in film can
667	Trench 7	Unit 2	Level 9	Feat 5.2	Firebox	1/4"	pot sherd
667	Trench 7	Unit 2	Level 9	Feat 5.2	Firebox	1/8"	Bone
667	Trench 7	Unit 2	Level 9	Feat 5.2	Firebox	1/8"	rock
667	Trench 7	Unit 2	Level 9	Feat 5.2	Firebox	fine	*Pinus* charcoal
667	Trench 7	Unit 2	Level 9	Feat 5.2	Firebox	fine	*Juniperus* charcoal
667	Trench 7	Unit 2	Level 9	Feat 5.2	Firebox fill	w5	quartz/gypsum crystal
667	Trench 7	Unit 2	Level 9	Feat 5.2	Firebox fill	w5	Bone chips
667	Trench 7	Unit 2	Level 9	Feat 5.2	Firebox fill	w5	unidentified hardwood
655	Trench 7	Unit 2	Level 9	sub-floor outside firebox		1/4"	Bone
655	Trench 7	Unit 2	Level 9	sub-floor outside firebox		1/4"	*Prosopis* charcoal

Table A-3 (continued)
MACROBIOLOGICAL REMAINS, LA 1178, GALLINAS SPRINGS RUIN

FS #	Trench #	Unit #	Level #	Feature	Depth	screen	Identification
655	Trench 7	Unit 2	Level 9	sub-floor outside firebox		1/4"	pot sherd
655	Trench 7	Unit 2	Level 9	sub-floor outside firebox		1/8"	cf *Pinus edulis* seed uncharred
655	Trench 7	Unit 2	Level 9	sub-floor outside firebox		fine	*Zea mays* kernel (cf flint)
655	Trench 7	Unit 2	Level 9	sub-floor outside firebox		fine	*Zea mays* cupule
655	Trench 7	Unit 2	Level 9	sub-floor outside firebox		fine	*Zea mays* cob-8 row
655	Trench 7	Unit 2	Level 9	sub-floor outside firebox		fine	*Pinus* charcoal
655	Trench 7	Unit 2	Level 9	sub-floor outside firebox		w5	obsidian flake
655	Trench 7	Unit 2	Level 9	sub-floor outside firebox		w5	*Zea mays* cupule
655	Trench 7	Unit 2	Level 9	sub-floor outside firebox		w5	pinon hulls, broken
647	Trench 7	Unit 2	Level 9-A	? Hearth/Stew Dump	90 cmbd	1/4	charred grass leaf
647	Trench 7	Unit 2	Level 9-A	? Hearth/Stew Dump	90 cmbd	1/4	pinon hull frags
647	Trench 7	Unit 2	Level 9-A	? Hearth/Stew Dump	90 cmbd	1/8"	*Pinus* charcoal
647	Trench 7	Unit 2	Level 9-A	? Hearth/Stew Dump	90 cmbd	1/8"	*Zea mays* cupule
647	Trench 7	Unit 2	Level 9-A	? Hearth/Stew Dump	90 cmbd	1/8"	bone fragments
647	Trench 7	Unit 2	Level 9-A	? Hearth/Stew Dump	90 cmbd	1/8"	Pinon hulls
647	Trench 7	Unit 2	Level 9-A	? Hearth/Stew Dump	90 cmbd	fine	Pine needle
647	Trench 7	Unit 2	Level 9-A	? Hearth/Stew Dump	90 cmbd	fine	Pinon seed
647	Trench 7	Unit 2	Level 9-A	? Hearth/Stew Dump	90 cmbd	fine	*Pinus* charcoal
647	Trench 7	Unit 2	Level 9-A	? Hearth/Stew Dump	90 cmbd	fine	Pinon hulls
647	Trench 7	Unit 2	Level 9-A	? Hearth/Stew Dump	90 cmbd	fine	*Zea mays* cob/cupule
647	Trench 7	Unit 2	Level 9-A	? Hearth/Stew Dump	90 cmbd	fine	*Juniperus* stem-charred
647	Trench 7	Unit 2	Level 9-A	? Hearth/Stew Dump	90 cmbd	w5	bone fragments
647	Trench 7	Unit 2	Level 9-A	? Hearth/Stew Dump	90 cmbd	w5	*Chenopodium* seed
647	Trench 7	Unit 2	Level 9-A	? Hearth/Stew Dump	90 cmbd	w5	Pinon hulls
725	Trench 8	Unit 1	Level 2				*Rhus* seed charred
790	Trench 8	Unit 2	Level 10	sub-floor	90-100 cm		*Zea mays* cob 10 rowed
781	Trench 8	Unit 2	Level 9	ashy lens		1/4"	bone in film can.
781	Trench 8	Unit 2	Level 9	ashy lens		1/4"	*Zea mays* cupule
781	Trench 8	Unit 2	Level 9	ashy lens		1/4"	*Pinus* charcoal
781	Trench 8	Unit 2	Level 9	ashy lens		1/4"	*Prosopis* charcoal
781	Trench 8	Unit 2	Level 9	ashy lens		1/8"	*Zea mays* kernel
781	Trench 8	Unit 2	Level 9	ashy lens		1/8"	bone fragments
781	Trench 8	Unit 2	Level 9	ashy lens		fine	*Pinus* charcoal
781	Trench 8	Unit 2	Level 9	ashy lens		fine	*Zea mays* cupule
781	Trench 8	Unit 2	Level 9	ashy lens		w5	obsidian chip
326	Trench 9	Unit 3	Level 4		60-70 cm		*Pinus* charcoal
380	Trench 9	Unit 3	Level 7				*Pinus* charcoal
394	Trench 9	Unit 3	Level 9		80-90 cm		*Pinus* charcoal 2 species
396	Trench 9	Unit 3	Level 10				*Pinus* charcoal

Figure A-1

MACROBOTANICAL REMAINS FROM LA1178 GALLINAS SPRINGS RUIN



Potential Dendro Samples

A total of 21 samples were submitted for determination of the potential of these specimens for dendrochronologic dating. Based on the taxon as well as the ring counts from these samples, none were considered as appropriate for this dating technique (Table A-4).

DISCUSSION

Pollen samples FS 630 and 631 were recovered from the ground floor contact in Unit 2 of Trench 7. Both contained high levels of Poaceae and Cheno-am pollen. *Zea mays* pollen was extremely high (35-37%), and both samples contained at least traces of several important economic taxa such as *Platyopuntia, Cylindropuntia,* Cactaceae, *Cleome, Polygonum, Portulaca,* and members of the Solanaceae. It must be remembered that the evidence for these plants is palynological, thus pollen was either brought in with other plant parts, or plants containing the flowers were being collected. The pollen concentrations of these taxa are somewhat intermediate; i.e. they are neither rare, nor do they show large concentrations. Thus it appears reasonable that the pollen was brought into the room along with the plants. In addition to known medicinal properties of these plants (Moerman, 1986), all are identified as being used for food and/or utilitarian uses (e.g. Waugh 1919; Gilmore 1919, 1933; H. Smith 1923, 1932, 1933; Densmore 1928; Yanovsky 1936; Tehon 1951; Brooklyn Botanical Garden 1964; Lust 1974; Asch and Asch 1981; King 1984). This is especially true for *Cleome* which is used as a source of carbon paint as well as a condiment (Bryant, 1986). Due to the lack of precision in palynological identification it cannot be conclusively demonstrated that these were present for any particular purpose. Most of the above taxa were recovered from FS 631 and may be indicative of a general storage area within the room, but without more definitive provenience information this remains speculation. Pollen of two species of *Typha* were also recovered from FS 631. Both species occupy the same ecological habitat and both are present near standing water throughout the region. The presence of this pollen suggests that the flowering heads were being utilized, rather than the vegetative portions. It has previously been demonstrated that *Typha* pollen was important ceremonially (Basehart 1973) and this may explain the presence of this pollen type within the room.

FS 224 contained no *Zea mays* pollen but did contain rather high frequencies of both *Artemisia* and Solanaceae pollen. Additionally, the Cheno-am percentages were somewhat lower than those in Trench 7. A small number of the *Artemisia* grains (2) counted were present in clumps representing 10-32 pollen grains. In these cases they are generally counted as a single grain and are indicative of anther fragments. This suggests that the flowering head of the plant may have been utilized. While the evidence is not conclusive, *Artemisia* is traditionally used as a purifying agent in association with Sweetgrass, by the Blackfoot and Cree of Alberta Canada (Hellson and Gadd, 1974), it is possible that the high pollen concentration values for this taxon may reflect a similar type of use.

Table A-4

RESULTS OF SCAN FOR DENDRO SAMPLES, LA 1178, GALLINAS SPRINGS RUIN

FS NUMBER	RECOMENDATION	WT IN GRAMS S
34	NO DENDRO	4.10
74	NO DENDRO	8.80
78	NO DENDRO	26.90
221	NO DENDRO	12.75
228	NO DENDRO	7.00
233	NO DENDRO	40.20
239	NO DENDRO	32.70
523	NO DENDRO	6.85
538	NO DENDRO	4.50
555	NO DENDRO	2.40
635	NO DENDRO	24.40
658	NO DENDRO	
659	NO DENDRO	1.40
686	NO DENDRO	24.95
777	NO DENDRO	5.70
782	NO DENDRO	54.00
794	NO DENDRO	5.70
863	NO DENDRO	2.90
1045	NO DENDRO	12.10
1140	NO DENDRO	2.80
2704	NO DENDRO	17.40

The floor sample from Trench 5 (FS 224) was located some distance west of those samples (FS 630, 631) which produced significant quantities of *Zea mays* pollen. This suggests that perhaps different activities were occurring in the two areas. Trench 5 was located somewhat closer to the previously trenched and partly excavated roomblock, in Structure 1. This may indicate that the floor sample analyzed was from an enclosed room which may have served either as habitation or storage. The floor samples with high incidence of *Zea mays* pollen, on the other hand, appear to be located in close proximity to a depression which might be a kiva. This difference alone might explain the differences in the pollen assemblages. Alternatively, since room remains were located both east and west of the Trench 6-7 excavation area, these suspected floor remains may be associated with a continuous room block which has been partly destroyed by the encroaching arroyo. If this is indeed the case, then the pollen assemblages argue strongly for differential room function.

No *Juniperus* pollen was recovered from any of the samples, although charcoal of this taxon was found from this site, but this is not really surprising since *Juniperus* pollen is extremely thin-walled and does not preserve well under adverse conditions. In an experimental study, Holloway (1981) observed that fresh pollen of Juniper was usually broken after a short period of time. Also, freshly prepared pollen of this taxon is invariably broken. Its absence from the pollen record at this site should not be interpreted as implying its absence from the local flora.

By comparison, the floor material from FS 643 contained rather few pollen types. *Zea mays* pollen was present but outside of the dominant Chenoams contained little else. While archaeologically, this sample may be unambiguous, palynologically little can be said about it in addition to the presence of corn.

Macrobotanical Remains

Pinon. Pinon remains consisting of charred hulls and needles were concentrated in Trench 7, Unit 2 and Trench 6, Unit 1, with most occurring in Trench 7. The majority of these occurred in the suspected hearth or 'stew dump' area of the unit just below the floor level. This deposit contained a variety of material (Table A-3) and arguably could have been either a hearth area or stew dump. The presence of pinon seeds and a higher proportion of kernels and cupules of corn suggest that it may have been a food dump. However, these pieces may have been inadvertently introduced into a hearth area. At this time, a more definitive identification of this feature is not possible.

Feature 5.2 was a firebox associated with the earliest pavement on the first floor level. This sample and the material from the sub-floor just outside the firebox contains equally diverse material. It is possible that both samples were from the same activity, with the remains from outside being the result of prehistoric cleaning of hearth areas.

Hardwood Taxa. In Table A-3, reported occurrences of both *Prosopis* and *Populus* charcoal were made. *Prosopis* charcoal was identified by the computer program on the basis of the wood anatomy. However, the wood structure of several members of the Fabaceae is extremely similar and in some cases impossible to separate. For example, *Acacia* and *Robinia* woods look almost identical to that of *Prosopis*. *Prosopis* was found at both Chupedara Mesa and above 6500 ft elevation at Fort Stanton by this author in 1988. The specimens at Fort Stanton, however, were generally stunted. Since the elevation at Gallinas Springs Ruin is at approximately 7400 ft, my suspicion is that these remains are probably *Robinia* as this genus occurs at higher elevations. There are several species of *Populus* which are present in the State. Gallinas Springs Ruin, at 7400 ft elevation falls within the Pine-Oak Belt as defined by Elmore (1976). *Populus acuminata, P. angustifolia, P. sargentii*, and *P. fremontii* either occur in this zone or at slightly lower elevations. Thus, the populus wood recovered from Gallinas Springs is probably one of the many species of cottonwood, although it is certainly possible that this wood represents *Populus tremuloides*, a high elevation species. The wood structure of this family is extremely similar and only by using longitudinal sections (which were done) is it possible to separate the material to the genus level. Thus while I am quite certain of the generic identification, it is impossible to determine species based on charcoal remains.

Analysis of Corn

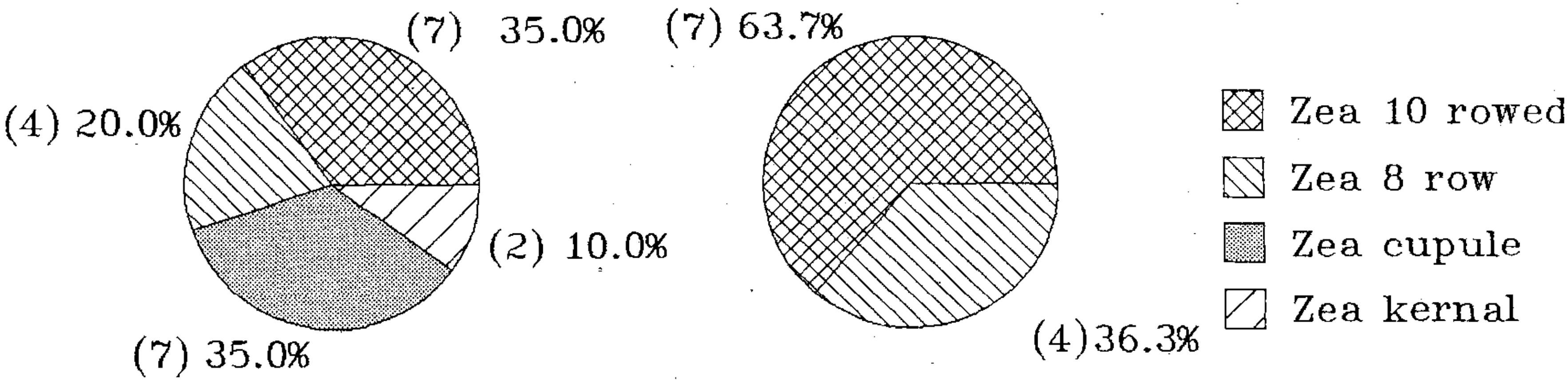
Corn remains were concentrated in Trenches 6, and 7 but ranged from Trench 3 through Trench 8. A total of 20 pieces were recovered including kernels, cupules, and cob fragments. Figure A-2 represents the frequency of these remains. In Figure A-2A, the percentages are based on the total number of fragments recovered. In Figure A-2b, the percentages are based solely on the cob fragments recovered.

The distribution fits well with the established chronology for the introduction of 8-rowed maize. At the time of occupation (A.D. 1200-1375), the 8-rowed variety appears to have been slightly less numerous than the 10-rowed variety. These data conform to the hypothesis presented by Winter (1973) which suggests that the introduction of 8-rowed maize occurred somewhat later in time.

The area with the higher concentration of corn remains, the floor areas of the room in Trenches 6 and 7, also contained samples with the highest concentration of corn pollen. Corn pollen is generally high in floor sediments of Anasazi structures. The distribution of the corn remains may indicate the use of this room as a habitation type room. The high incidence of corn pollen thus may reflect a localized storage of flowering corn plants. This interpretation is based primarily on the high pollen concentration values obtained from these samples. The macrobotanical remains are indicative of the type of remains generally found as a fuel deposit. Only a very small fraction of the remains were of kernels and fairly high frequencies of broken cobs and cupules were recovered. This might indicate that these items were being used as fuel sources. Alternatively, the high incidence of corn pollen may reflect a ceremonial usage, however, this interpretation is not as well supported by the data.

ZEA MAYS REMAINS FROM LA 1178

Gallinas Springs Ruin



All Corn Remains　　　　Corn Cob Remains

2A based on total Zea mays remains recovered
2B based on cob remains only

Numbers in Parentheses are Number of Remains

Table A-5

RESULTS OF CORN MEASUREMENTS

FS Number	Specimen Description	Measurements	Comments
651	8-row cob type	rachis diameter 5.1, 4.3mm pith diam. 1.9, 2.7 mm Cupule wid. 4.9,4.0 mm Aper. wid. 3.7, 2,0 mm	fasciated, squashed No bulbar swellings soft upper glumes open cupules
	large cylindrical frag. 6-row bottom, 8-row at top	no measurements	No bulbar swelling soft upper glumes open cupules long interstices buttresses don't fill aperture
	short cylidrical frag. 10 rowed	rachis diameter 7.0 mm pith diameter 3.9 mm cupule width 5.0 mm aperture width 2.7 mm aperture length 1.7 mm wing width 1.2 mm wing length 1.6 mm rachis segment length 2.9 mm insterstice length 0	winged cupules sulcus present bulbar swellings upper glumes missing cupules reflexed in 10-row, squarish
53	8-rowed	rachis diameter 5.4 mm pith diameter @ butt 3.9 mm cupule width 5.3 mm aperture width 2.3 mm wing width 1.8 mm aperture length 1.5 mm rachis segment length 3.4 mm interstice length 0.3 mm	

Measurements taken by B. Benz Ph.D. at Corn Conference May 1990

At the author's request, two samples of corn remains from LA 1178, were recently analyzed at a conference on archaeological corn remains held at Minneapolis, Minnesota. FS 651, consisting of three cob fragments, and FS 53, consisting of a single cob, were examined by Dr. Bruce Benz, a recognized authority on *Zea mays.* The results of his measurements are presented in Table A-5. Three of the specimens were of the 8-row variety with the other representing a 10-row type of corn. The 10-row type is more typical of "Pueblo-Corn" and is generally associated with higher elevations. The 8-row types are more similar to a form generally found in northern Mexico and is indicative of a lower elevation. The presence of both types within a single sample (both were found in FS 651) is intriguing. At Gallinas Springs, there appears to be a mixture of corn types from both high and low elevations. This type of admixture may be indicative of certain trading or exchange patterns but the author would hesitate to place too much emphasis on the admittedly small sample. Other cob remains should be examined from additional sites in the Southwest to see if this pattern repeats. Once additional data is recovered, we may be able to speculate more reliably concerning the derivations of certain corn types and economic trading patterns.

CONCLUSIONS

The pollen data obtained from the three pollen washes were inconclusive. Based on the small amounts of pollen recovered and on the calculated pollen concentration values, these data will not be very useful in interpretation. However, in future excavations, it is imperative that these types of samples be collected. They should never form the majority of the samples submitted for analysis but should be routinely collected and at least scanned for pollen content.

Based on the distribution of the macrobotanical remains, most of the information appears to be derived from units 2 or higher, or those away from the arroyo face. We have good information at this point but additional samples, if available, might help fill in the gaps. Samples from additional trenches were, in the author's opinion, needed in order to prevent a mis-interpretation of concentration of botanical remains based on the trench units analyzed. For example, most of the botanical remains are located in Trenches 6 and 7. Is this really a concentration or an artifact of sampling bias in regard to the samples collected?

There did not appear to be any clear separation or distribution of macrobotanical remains with regard to the roomblocks. This is more likely due to the nature of the excavation rather than to the distribution of the remains. Also, the diversity of plant remains was not as great as those reported in earlier excavations. P. Knight, in his earlier report of botanical remains from Gallinas Springs Ruin, identified an extremely diverse group of plant taxa. However, it should be remembered that he was dealing with the excavation of complete rooms and large midden area exposures, and he was not restricted to remains from the trench units. Additionally, his sampling units were much larger which may, in part, explain the difference in species diversity. The trenches in the present examination were located within an area that is actively eroding due to the action of the arroyo. This

might explain, in part, the decreased diversity of the plant material. In the section where the trenches were located, some floor material was present but the majority of the room had presumably already eroded away.

The analysis of the corn remains was very illustrative. Evidence was provided that two major types of corn were present and were being utilized contemporaneously by the inhabitants of LA 1178. While these measurements and data are preliminary, they indicate a much more complex pattern of maize utilization than previously thought. Unfortunately, in spite of the many years of research in the Southwest, we still lack a comparative database for archaeological corn remains. Hopefully this will change as the type of measurements necessary are collected from sites throughout the region and integrated into the routine analysis of archaeobotanical data.

REFERENCES CITED

ASCH, D.L., ASCH, N.B.

1981 Archeobotany of Newbridge, Carlin, and Weitzer Sites- the White Hall Components. In: Faunal exploitation and resource selection: early Late Woodland Subsistence in the Lower Illinois Valley by B.W. Styles. Northwestern University Archaeological Program Scientific Papers No. 3, Appendix B.

BARKLEY, F.A.

1934 The statistical theory of pollen analysis. Ecology 15:283-289

BASEHART, H.W.

1973 Mescalero Apache Subsistence Patterns. In: Human Systems Research Technical Manual. Human Systems Inc. Las Cruces, pp 145-181.

BROOKES,D.,THOMAS,K.W.

1967 The distribution of pollen grains on microscope slides. Part 1. the non-randomness of the distribution. Pollen et Spores 9:621-629.

BROOKLYN BOTANIC GARDEN

1964 Dye plants and dyeing- a handbook. Brooklyn Botanic Garden Handbook No. 46, Plants and Gardens vol. 20.

BRYANT, V.M., MORRIS, D.P.

1986 Uses of ceramic vessels from Antelope House: the pollen evidence. In: Archaeological investigations at Antelope House. D.P. Morris (ed). National Park Service, 582p. Washington DC.

DENSMORE, F.

1928 Uses of plants by the Chippewa Indians. Bureau of American Ethnology Annual Report No. 44:275-397.

ERDTMAN, G.

1960 The acetolysis method: a revised description. Svensk. botanisk Tidskrift Bd. 54:561-564.

GILMORE, M.R.

1919 Uses of plants by the Indians of the Missouri River Region. In: Smithsonian Institution Bureau of American Ethnology 33rd Annual Report. pp 43-154. Washington DC

1933 Some Chippewa uses of plants. Papers of the Michigan Academy of Science, Arts, and Letters 17:119-143.

HELLSON, J.C., GADD, M.

1974 Ethnobotany of the Blackfoot Indians. National Museum of Man Mercury Series. No 19., Ottawa Ontario Canada. 138 p.

HOLLOWAY. R.G.

1981 Preservation and experimental diagenesis of the pollen exine. Ph.D. dissertation on file, Texas A&M University, College Station TX 317p.

KING, F.B.

1984 Plants, People, and Paleoecology. Illinois State Museum Scientific Papers XX, Springfield IL, 224p.

LUST, J.

1974 The Herb Book. Bantam Books, New York.

MOERMAN, D.E.

1986 Medicinal plants of Native America. Vols. 1&2. Research Reports in Ethnobotany, Contribution 2. University of Michigan Museum of Anthropology Technical Reports No. 19, Ann Arbor Michigan, 910pp.

SMITH, H.H.

1923 Ethnobotany of the Menomini Indians. Bulletin of the Milwaukee Public Museum 4:1-174.

1932 Ethnobotany of the Ojibwa Indians. Bulletin of the Milwaukee Public Museum 6:327-525.

1933 Ethnobotany of the Forest Potawatomi Indians. Bulletin of the Milwaukee Public Museum 7:1-230.

TEHON, L.R.

1951 The drug plants of Illinois. Illinois State Natural History Survey, Circular No. 44.

WAUGH, F.W.

1916 Iroquois foods and food preparation. Canada Department of Mines Geological Survey Anthropological Series No. 12.

WINTER,J.

1973 The distribution and development of Fremont maize agriculture: some preliminary interpretations. American Antiquity 38:439-452.

YANOVSKY, E.

1936 Food plant of the North American Indians. United States Department of Agriculture Miscellaneous Publications No. 237.

APPENDIX B

RADIOCARBON DATES

BETA ANALYTIC INC.

URRY A. TAMERS, PH. D.
RRY J. STIPP, PH. D.
O-DIRECTORS

4985 S.W. 74 COURT
MIAMI, FLORIDA
33155 U.S.A.

March 24, 1990

Dr. Kenneth J. Lord
Chambers Group Inc.
2021 Girard Blvd., SE
Suite 205
Albuquerque, NM 87106

Dear Dr. Lord:

Please find enclosed the results on your four charcoal samples recently submitted for radiocarbon dating analyses. We trust these dates will be interesting for your work.

As before, the charcoals were pretreated by first examining for rootlets. They were then given our acid, alkali, acid series of soakings to remove carbonates and humic acids. The following benzene syntheses and counting went normally.

We are enclosing our invoice. As always, if there are any questions or if you would like to discuss the dates, call us at any time.

Sincerely yours,

Murry Tamers

Murry Tamers, Ph.D.
Co-director

P.S. I'm including some data sheets for future samples and a copy of our new brochure for your files.

TELEPHONE: 305-667-5167 / FAX: 305-663-0964 / BITNET: XNRBET22@SERVAX

BETA ANALYTIC INC.

(305) 667-5167

UNIVERSITY BRANCH
P.O. BOX 248113
CORAL GABLES, FLA. 33124

REPORT OF RADIOCARBON DATING ANALYSES

FOR: Kenneth J. Lord
Chambers Group, Inc.

DATE RECEIVED: February 26, 1990

DATE REPORTED: March 24, 1990

SUBMITTER'S PURCHASE ORDER #

OUR LAB NUMBER	YOUR SAMPLE NUMBER	C-14 AGE YEARS B.P. ± 1σ	
Beta-36112	FS 78 LA 1178	980 +/- 70 BP	(charcoal)
Beta-36113	FS 221 LA 1178	880 +/- 60 BP	(charcoal)
Beta-36114	FS 239 LA 1178	750 +/- 50 BP	(charcoal)
Beta-36115	FS 658 LA 1178	710 +/- 50 BP	(charcoal)

These dates are reported as RCYBP (radiocarbon years before 1950 A.D.). By international convention, the half-life of radiocarbon is taken as 5568 years and 95% of the activity of the National Bureau of Standards Oxalic Acid (original batch) used as the modern standard. The quoted errors are from the counting of the modern standard, background, and sample being analyzed. They represent one standard deviation statistics (68% probability), based on the random nature of the radioactive disintegration process. Also by international convention, no corrections are made for DeVries effect, reservoir effect, or isotope fractionation in nature, unless specifically noted above. Stable carbon ratios are measured on request and are calculated relative to the PDB-1 international standard; the adjusted ages are normalized to -25 per mil carbon 13.

APPENDIX C

OBSIDIAN ANALYSES

EASTERN NEW MEXICO UNIVERSITY Portales 88130

Agency for Conservation Archaeology

March 12, 1990

Mr. Jack Bertram
2021 Girard Blvd., SE, Suite 205
Albuquerque, NM 87106

Dear Jack:

This letter details the results of the obsidian hydration and sourcing analysis done on 14 obsidian artifacts from LA 1178 and one from LA 1173.

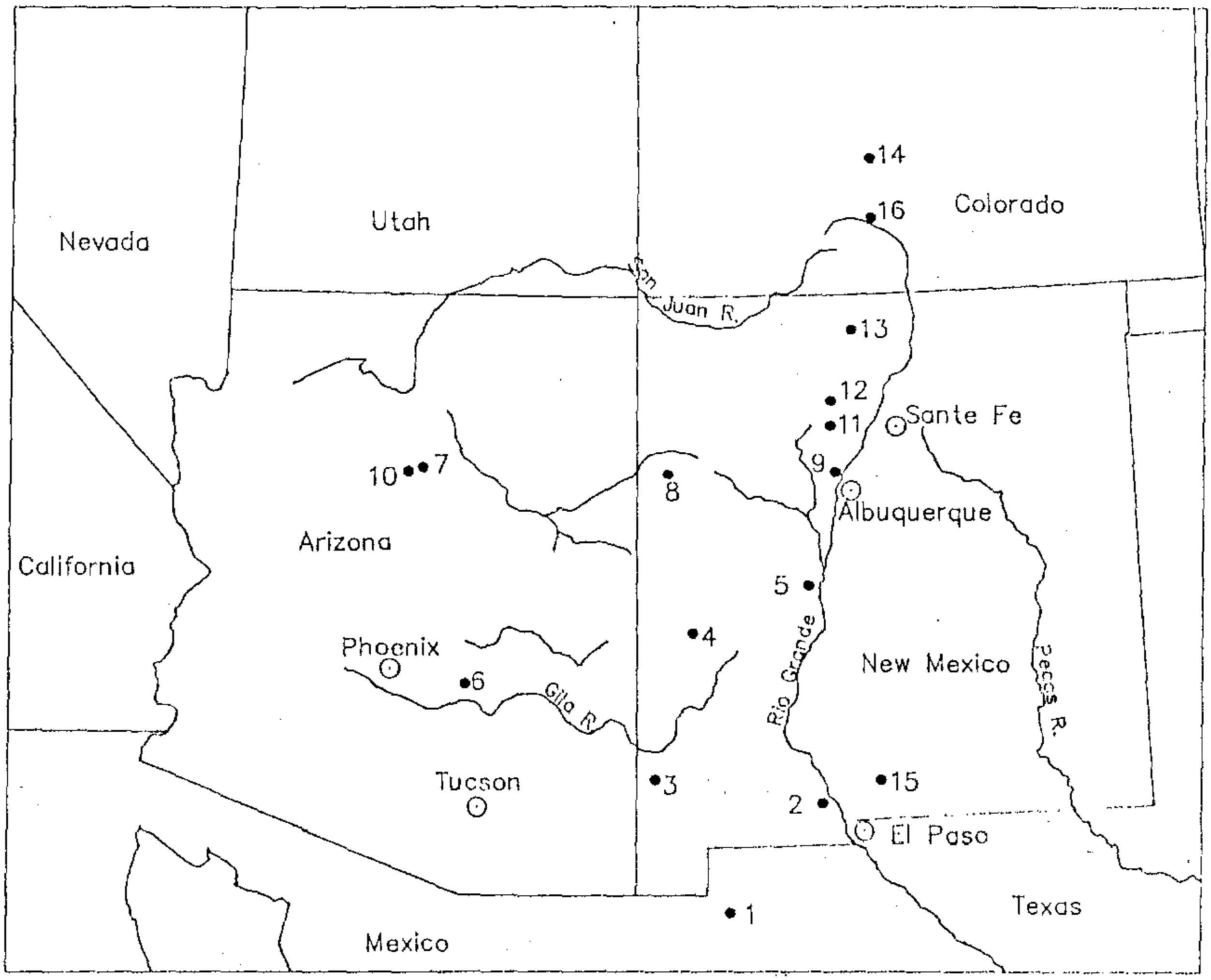
X-Ray Fluorescence Analysis

Introduction

Geochemical characterization of known and unknown samples was carried out using rapid XRF at the trace elemental level. XRF analysis is a non-destructive, yet powerful and rapid method for determining chemical characterization of materials (Hoffer 1985; Lister 1975). An extensive literature indicates that XRF provides a rapid and economic way of isolating distinct obsidian sources (Jack 1976; Ericson et al. 1976; Stross et al. 1976; Reeves and Ward 1976; Dixon 1976). Rapid XRF can detect the presence of trace elements as infrequent as 10 parts per million. This degree of resolution distinguishes sources that are otherwise similar in major elemental or compound composition. Other investigations of geochemical characterization of obsidians have resulted in similar conclusions (Jack 1976; Ericson et al. 1976; Stross et al. 1976; Reeves and Ward 1976; Dixon 1976; Michels and Tsong 1980). In addition to a fine-grained examination of samples, representative and thorough sampling of source areas is necessary to increase the probability of accurate classification.

Source areas shown in Figure 1 were characterized by ENMU-OHL prior to this project. In all instances, those samples submitted for XRF characterization were selected because they are considered to be macroscopically representative of a particular geologic deposit or flow. Further, no source was characterized with fewer than five samples. Many sources were sampled more extensively because of their macroscopic variability and their spatial and/or temporal extent.

Several other investigators have attempted to define obsidian sources in the New Mexico region. Some of these are more successful than others, and some provide data that cannot be easily compared to the results of this report. Most of these research endeavors are programmed along the methodology outlined by Ward (1974). But all have flaws that limit their usefulness. For example, the sourcing research reported by Newman and Neilsen (1985) uses only one example from a source and examines the chemical composition of obsidian for 10 elements. They note that two of these elements (Sr and K) are poor contributors to source discrimination. Tripolar graphs, chi-square analysis, and cluster analysis are the analytical techniques used to assign artifacts to particular sources. While useful in several ways, this research is hindered primarily by the fact that the variability <u>within</u> a source is not described.



1. Cave Creek, Northern Old Mexico
2. Rio Grande Terrace Gravels, Southcentral N.M.
3. Mule Creek, Southwest N.M. (3540)
4. Red Hill, Western N.M.
5. Sante Fe Formation Gravels Dalles--Puerco Siding(3511)
6. Superior, Southeastern Arizona (3602)
7. San Francisco Mts. Northcentral Arizona
8. Grants Ridge, Northwest N.M. (3510)
9. Rio Grande Terrace Gravels, Central N.M.
10. Government Mt.,Northeast Arizona
11. Jemez Mts., Northcentral N.M.(3520-26)
12. Polvadera Peak, Northern N.M.(3530)
13. San Antonio Mt.,Northern N.M.
14. Cochetopa, Central CO.
15. Tularosa Basin, Southcentral N.M.
16. Beaver Creek, Southcentral CO.

Figure 1.

Methods

The 15 obsidian artifacts submitted by Chambers Group to ENMU-OHL were sent to the New Mexico Bureau of Mines and Mineral Resources where x-ray fluorescence (XRF) analysis was done by Mr. Chris McKee. All samples were powdered prior to XRF analysis to homogenize them and their concomitant XRF values. In addition, powdering provides a relatively uniform target area for x-rays. Consequently this procedure minimizes any variation caused by geochemical changes in the hydrated zone and the underlying material, as well as differences in x-ray values caused by subtle variations in the geometry of the target areas. The results of the XRF analysis is presented in Table 1.

Discriminant Function Analysis

Rather than attempting to compare the geochemistry of known and unknown samples using frequencies of a few "key" elements or a few of the major chemical compounds, comparisons were accomplished using a multivariate statistic, discriminant function analysis. It is capable of classifying unknown observations into known populations considering all known variables and their range of variation within and between groups, in this case, source areas of obsidian. Statistical analyses of XRF data were conducted with the statistical software SYSTAT.

An excellent discussion of the different ways to "fingerprint" obsidian to particular sources is found in Hughes (1986). He notes that ternary diagrams (which depict the relative frequency of three elements of a group of samples) often cannot clearly distinguish sources with overlapping plots. These diagrams also are complicated by "the fact that specimens from the same source will not plot in the same location on the graph if different measurement units are employed" (Hughes 1986:53). Multivariate techniques, specifically discriminant analysis procedures, have long been used to more clearly determine sources for lithic materials (cf. Ericson 1981; Ward 1974; Nelson and Holmes 1979; Luedtke 1979). While also noting in detail the statistical assumptions of discriminant analysis, Hughes summarizes the strengths of using this procedure:

> Discriminant analysis, then, accomplishes two objectives: first, it <u>describes</u> or <u>identifies</u> groups of objects on the basis of distinctive combinations of discriminating variables; and second, it <u>predicts</u> group membership or <u>classifies</u> ungrouped cases into one or another of the groups in the sampling universe on the basis of mathematical equations derived from known groups. Thus, the <u>descriptive</u> aspect of discriminant analysis simply derives allocation rules to characterize the differences between obsidian sources on the basis of major, minor, trace, or rare earth elements. Once this step has been accomplished, discriminant analysis can be employed to <u>classify</u> cases of unknown origin (these are usually obsidian artifacts) on the basis of allocation rules derived from the analysis of known obsidian sources [1986:56-57].

Discriminant function analysis uses either the discriminant variable scores or the canonical discriminant functions to predict the source to which a particular sample most likely belongs. In multivariate space, this procedure compares the unknown sample's position to each source group's centroid to determine the source

Table 1. Results of X-Ray Fluorescence Analysis.

Sample No.	Element																								
	Cr	V	Ga	Zn	Cu	Ni	Mo	Nb	U	Th	Pb	Rb	Zr	Y	Sr	TiO_2	Fe_2O_3-T	MgO	CaO	SiO_2	Al_2O_3	Na_2O	K_2O	MnO	P_2O_5
FS#1156 (LA 1173)	0	18	23	43	31	3	6	24	20	38	53	265	260	91	10	0.08	1.03	0.05	0.54	77.8	13.6	5.11	4.48	0.07	0
FS#683 (LA 1178)	0	0	49	196	34	5	3	166	28	37	79	495	190	153	0	0.04	0.97	0.02	0.37	73.4	12.9	5.25	4.11	0.15	0.01
FS#936 (LA 1178)	5	25	41	184	21	0	3	177	21	25	64	594	188	175	0	0.03	0.8	0.05	0.52	75.4	13.9	5.74	4.01	0.2	0.01
FS#773 (LA 1178)	0	0	36	109	23	0	13	98	15	28	6	235	301	113	0	0.08	1.13	0.04	0.27	76.1	12.3	5.22	4.18	0.11	0
FS#827 (LA 1178)	0	0	38	198	40	0	5	174	30	41	82	499	193	160	0	0.04	0.95	0.02	0.4	73.3	13	5.26	4.01	0.15	0
FS#793 (LA 1178)	0	15	49	191	26	0	5	230	23	34	84	573	232	190	0	0.04	0.98	0.02	0.42	74.5	13.3	5.9	3.96	0.13	0
FS#1052 (LA 1178)	0	34	35	76	45	0	3	27	8	16	19	172	502	73	197	0.27	1.45	0.26	0.88	73.1	14.4	5.62	4.87	0.11	0.04
FS#119 (LA 1178)	0	7	29	109	38	0	0	50	31	50	86	179	178	80	0	0.08	1.15	0.03	0.27	76.1	12.2	5.15	4.25	0.1	0.02
FS#797 (LA 1178)	0	3	48	184	43	8	0	189	19	20	62	596	188	182	0	0.03	0.79	0.05	0.48	76.1	14.3	6.28	4	0.17	0.01
FS#564 (LA 1178)	0	34	25	76	32	0	0	23	21	31	39	164	406	73	173	0.28	1.49	0.31	0.97	73.3	15.2	6.07	4.42	0.11	0.04
FS#1144 (LA 1178)	0	22	30	45	33	0	31	43	16	28	37	132	163	47	37	0.12	0.71	0.07	0.44	76.1	12.8	4.65	4.64	0.11	0
FS#1168 (LA 1178)	0	10	23	44	22	0	0	21	37	63	97	123	112	34	19	0.12	0.75	0.09	0.47	76.5	13	4.94	4.38	0.1	0.02
FS#1156 (LA 1178)	0	8	42	60	35	0	12	32	25	26	30	125	227	57	106	0.25	1.32	0.31	0.91	72.5	14.9	5.93	4.32	0.11	0.04
FS#723 (LA 1178)	0	0	21	16	33	0	10	30	7	32	8	79	46	41	0	0.1	0.66	0.11	0.46	75.5	13.6	5.58	4.05	0.08	0.01
FS#711 (LA 1178)	0	11	56	94	34	4	6	55	31	38	41	156	144	73	0	0.08	1.03	0.06	0.26	77.5	13.2	5.74	4.11	0.1	0

Note: Trace element data is in ppm, oxides are percent weight.

most similar to the unknown sample. In this case, classification of known sources by discriminant function analysis resulted in a 100% correct solution (Table 2).

Sources and Assumptions

Results of the XRF and discriminant function analysis (Table 3) are interpreted as indicating that the obsidian samples were derived from several sources. These are Jemez, Grants, San Antonio/No Agua Mt., and Red Hill, New Mexico and Beaver Creek, Colorado. Although the probabilities for all of the samples are good (none less than 75%) this does not absolutely indicate that the artifacts have been sourced correctly. Discriminant analysis will classify all of the artifacts even if the correct source is not in the database of known sources (see Hughes 1986:78-85). Therefore, it is possible that these artifacts are not classified correctly and you should keep this in mind when interpreting the results.

If you have any questions, please do not hesitate to contact me at (505) 562-2254.

Sincerely,

John Montgomery

John L. Montgomery, Ph.D.
Co-Director, Obsidian Hydration Laboratory

KEY to Tables 2 and 3

C	Cochetopa, Colorado
BC	Beaver Creek, Colorado
GR	Grants Ridge (3510)[1]
J	Jemez (3520-26)[2]
MC	Mule Creek (3540)[1]
MM	Mineral Mountain, Utah
MO	Modena, Utah
PP	Polvadera Peak (3530)[1]
RH	Red Hill (3550)[2]
SA	San Antonio/No Agua Mountain

Numbers in parentheses are source numbers used by Warren:

[1]Warren (1977:26-27)

[2]Warren (1979:31)

Table 2. Statistical Classification Results for Known Sources.

Known Group	Classified Group	GR	J	MC	PP	RH	SA	MM	MO	BC	C
GR	GR	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	GR	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	GR	0.992	0.000	0.000	0.000	0.008	0.000	0.000	0.000	0.000	0.000
GR	GR	0.999	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000
GR	GR	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	GR	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	PP	0.341	0.000	0.000	0.659	0.000	0.000	0.000	0.000	0.000	0.000
GR	GR	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
J	J	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
J	J	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
J	J	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
J	J	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
J	J	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
J	J	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
J	J	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
J	J	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
J	J	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
J	J	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
J	J	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
J	J	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
J	J	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
J	J	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
J	J	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
J	J	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
J	J	0.000	0.999	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000
J	J	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
J	J	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MC	MC	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MC	MC	0.000	0.000	0.996	0.004	0.000	0.000	0.000	0.000	0.000	0.000
MC	MC	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MC	MC	0.000	0.000	0.983	0.017	0.000	0.000	0.000	0.000	0.000	0.000
MC	MC	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MC	MC	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MC	MC	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MC	MC	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
MC	MC	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PP	PP	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000
PP	PP	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000
PP	PP	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000
PP	PP	0.001	0.000	0.000	0.999	0.000	0.000	0.000	0.000	0.000	0.000
PP	PP	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000
PP	PP	0.000	0.000	0.014	0.986	0.000	0.000	0.000	0.000	0.000	0.000
PP	PP	0.000	0.000	0.005	0.995	0.000	0.000	0.000	0.000	0.000	0.000
PP	PP	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000
PP	PP	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000
PP	PP	0.000	0.000	0.003	0.997	0.000	0.000	0.000	0.000	0.000	0.000
RH	RH	0.039	0.000	0.000	0.000	0.961	0.000	0.000	0.000	0.000	0.000

Table 2. (Continued).

Known Group	Classified Group	GR	J	MC	PP	RH	SA	MM	MO	BC	C
		Known Sources									
RH	RH	0.276	0.000	0.000	0.000	0.724	0.000	0.000	0.000	0.000	0.000
RH	PP	0.000	0.000	0.000	0.629	0.370	0.000	0.000	0.000	0.000	0.000
RH	RH	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
RH	RH	0.019	0.000	0.000	0.000	0.981	0.000	0.000	0.000	0.000	0.000
RH	RH	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
RH	RH	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
RH	RH	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
RH	RH	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
RH	RH	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000
SA	SA	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000
SA	SA	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000
SA	SA	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000
SA	SA	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000
SA	SA	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000
SA	SA	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000
SA	SA	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000
SA	SA	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000
SA	SA	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000
SA	SA	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000	0.000
MM	MM	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000
MM	MM	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000
MM	MM	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000
MM	MM	0.000	0.000	0.000	0.000	0.000	0.000	0.963	0.000	0.037	0.000
MM	MM	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000
MO	MO	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000
MO	MO	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000
MO	MO	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000
MO	MO	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000
MO	MO	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000
BC	BC	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000
BC	BC	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000
BC	BC	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000
BC	BC	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000
BC	BC	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000
C	C	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000
C	C	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000
C	C	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000
C	C	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000
C	C	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000
C	C	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000
C	C	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000
C	C	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000
C	C	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000

Table 3. Statistical Classification Results for Archaeological Samples.

Sample No.	Classified Source	Known Sources GR	J	MC	PP	RH	SA	MM	MO	BC	C
FS#1156 (LA 1173)	J	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FS#683 (LA 1178)	GR	0.995	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FS#836 (LA 1178)	GR	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FS#773 (LA 1178)	J	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FS#827 (LA 1178)	GR	0.999	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FS#793 (LA 1178)	GR	0.626	0.374	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FS#1052 (LA 1178)	BC	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000
FS#119 (LA 1178)	J	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FS#797 (LA 1178)	GR	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
FS#564 (LA 1178)	BC	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000
FS#1144 (LA 1178)	SA	0.000	0.054	0.000	0.000	0.005	0.941	0.000	0.000	0.000	0.000
FS#1168 (LA 1178)	SA	0.099	0.004	0.000	0.000	0.016	0.882	0.000	0.000	0.000	0.000
FS#1156 (LA 1178)	BC	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000
FS#723 (LA 1178)	RH	0.000	0.000	0.000	0.211	0.789	0.000	0.000	0.000	0.000	0.000
FS#711 (LA 1178)	J	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

References Cited

Dixon, J.E.
1976 Obsidian Characterization Studies in the Mediterranean and the Near East. In *Advances in Obsidian Glass Studies: Archaeological and Geochemical Perspectives*, edited by R.E. Taylor, pp. 288-333. Noyes Press, New Jersey.

Ericson, J.E.
1981 Exchange and Production Systems in California Prehistory: The Results of Hydration Dating and Chemical Characterization of Obsidian Sources. *British Archaeological Reports, International Series* 110.

Ericson, J.E., T.A. Hagan, and C.W. Chesterman
1976 Prehistoric Obsidian in California II: Geologic and Geographic Aspects. In *Advances in Obsidian Glass Studies: Archaeological and Geochemical Perspectives*, edited by R.E. Taylor, pp. 218-239. Noyes Press, New Jersey.

Hoffer, J.M.
1985 Chemical Analysis of Archaeological Samples by Energy Dispersive X-Ray Fluorescence. Ms. in possess of author.

Hughes, R.E.
1986 Diachronic Variability in Obsidian Procurement Patterns in Northeastern California and Southcentral Oregon. *University of California Publications in Anthropology* 17.

Jack, R.N.
1976 Prehistoric Obsidian in California I: Geochemical Aspects. In *Advances in Obsidian Glass Studies: Archaeological and Geochemical Perspectives*, edited by R.E. Taylor, pp. 183-217. Noyes Press, New Jersey.

Katsui, Y., and Y. Kondo
1976 Variation in Obsidian Hydration Rates for Hokkaido, Northern Japan. In *Advances in Obsidian Glass Studies: Archaeological and Geochemical Perspectives*, edited by R.E. Taylor, pp. 120-140. Noyes Press, New Jersey.

Lister, D.B.
1975 Application of Energy Dispersive X-Ray Fluorescence. *Instrument Society of America* AID 75437:143-151.

Luedtke, B.E.
1979 The Identification of Sources of Chert Artifacts. *American Antiquity* 44(4):744-757.

Michels, J.W., and C.A. Bebrich
1971 Obsidian Hydration Dating. In *Dating Techniques for the Archaeologist*, edited by H.N. Michael and E.K. Ralph, pp. 164-221. MIT Press, Cambridge, Massachusetts.

Michels, J.W., and I.S.T. Tsong
1980 Obsidian Hydration Dating: A Coming of Age. In *Advances in Archaeological Method and Theory*, vol. 3, edited by M.B. Schiffer, pp. 405-444. Academic Press, New York.

Nelson, F.W., and R.D. Holmes
1979 Trace Element Analysis of Obsidian Sources and Artifacts from Western Utah. *Antiquities Section Selected Papers* 15. Utah State Historical Society, Salt Lake City.

Newman, J.R., and R.L. Neilsen
1985 Initial Notes on the X-Ray Fluorescence Sourcing of Northern New Mexico Obsidians. *Journal of Field Archaeology* 12(3):377-383.

Reeves, R.D., and G.K. Ward
1976 Characterization Studies of New Zealand Obsidians: Toward a Regional Prehistory. In *Advances in Obsidian Glass Studies: Archaeological and Geochemical Perspectives*, edited by R.E. Taylor, pp. 259-287. Noyes Press, New Jersey.

Stross, F.H., T.R. Hester, R.F. Heizer, and R.N. Jack
1976 Chemical and Archaeological Studies of Mesoamerican Obsidian. In *Advances in Obsidian Glass Studies: Archaeological and Geochemical Perspectives*, edited by R.E. Taylor, pp. 240-258. Noyes Press, New Jersey.

Ward, G.K.
1974 Comparison of Source and Artifact Characterization Data Using a Generalized Distance Measure. *American Antiquity* 39(3):473-477.

Warren, A.H.
1977 Geology and Prehistoric Mineral Resources: White Rock Canyon, Sandoval County, New Mexico. In *Archaeological Investigations in Cochiti Reservoir, New Mexico Volume I: A Survey of Regional Variability*, edited by Jan V. Biela and Richard C. Chapman, pp. 15-30. Office of Contract Archaeology, University of New Mexico, Albuquerque.

Warren, A.H. (compiler)
1979 *Lithic Identification and Quarry Source Workshop.* New Mexico State University, Cultural Resources Management Workshop, February 22-23, 1979, Las Cruces.

APPENDIX D

SPECIAL SAMPLES MINERALOGICAL STUDY

APPENDIX D

SPECIAL SAMPLES MINERALOGICAL STUDY

David V. Hill

A series of minerals and materials of unknown composition were collected during the testing carried out at Gallinas Springs. This section will focus on the identification of these materials and, where appropriate, place them in regional and behavioral contexts.

The analytical techniques utilized in the identification of the mineralogical and other samples were specific to the type of material being analyzed. Consequently, analytical techniques varied with the type of materials analyzed. Each material class of specimens will be dealt with in a separate section; a discussion of the method utilized will be presented in each identification discussion.

Gray Ash

Four samples of a grayish to white material, labeled thixotropic clay or ash soil in the field, were collected for analysis.

Provenience of Samples			
F.S. No	Trench	Unit	Level
264	5	2	14
229	5	2	10
537	6	2	8
388	9	3	8

Approximately five grams of each of these samples were placed in separate test tubes to which muriatic acid was then added. The application of the acid caused violent reactions in all of the samples. The test tubes were then filled with water and shaken and the resulting liquid filtered and allowed to dry. The remaining material was examined under a binocular microscope between 10X and 50X.

All of the dried samples contained fine pieces of wood charcoal and apparently rounded grains of tuffaceous sands, all of which were coated with a light grayish stain, presumably the remains of the original material. Based on the violent reaction of the grayish white substance when exposed to acid and the presence of only small fragments of charcoal and

sand after drying suggests that this thixotropic soil is actually calcic wood ash. Additional evidence for this identification is indicated by the recovery of this grayish material from in situ trash deposits. Also FS 229 was recovered from a lens consisting of clay, ash, and charcoal.

Room Floor Sample

A bulk sample of an exceptionally hard room floor, encountered during the excavation of Trench 7, was collected in order to determine the composition of this material. In the bulk sample, actual sections of floor could be distinguished from the lower floor fill by their flat surface and laminated structure. This structure indicates the compaction of the living surface. The soil of the floor is a sandy loam with very little clay. The sand component appears under magnification to be tuffaceous in origin; it resembles that found in the ash samples. The soil reacted moderately to the application of muriatic acid.

An attempt was made to look for the presence of blood in the floor, as blood was occasionally used as a binder in floors at Bandelier National Monument. This analysis was performed by first placing a few drops of saline solution on the floor surface and then withdrawing the solution and placing it on two Hemastix strips. This technique was proved to be successful in recognizing the present of blood on stone tools (Downs, 1985).

No reaction was observed on the strips. Thus, blood was probably not present in the floor. However, this is the first time that this technique has been tried on structural floors. Future studies of this kind should be carried out on floors from different types and ages of structures in order to understand in what situations blood floors are preserved and what are the best techniques for identifying them.

The hardness of the floors is hard to explain due to the lack of clay or the lack of a bonding agent such as blood. Perhaps the amount of calcium carbonate combined with the compression of the fill from ground pressure made the floor so hard.

Mineral Specimens

Several types of minerals were recovered during the excavations. These minerals were identified using x-ray diffraction. This analysis was conducted by Dr. Nancy J. McMilliam of the Earth Sciences Department at New Mexico State University. Raw data forms summarizing these analyses are presented below.

Three samples of an earthy reddish brown material (2.5YR 5/6) were found to contain hematite.

Hematite Specimens from Gallinas Springs Pueblo			
F.S. No	Trench	Unit	Level
1169	2	1	13
1031	8a	2	6
207	5	2	-

Hematite is a fairly common mineral in Socorro County and has been reported from most of the mining districts (Northrop, 1959) although it is assumed that the present specimens were collected from outcrop sources rather than from extensive mining excavations. This is most likely the case for FS 207. This specimen is a mano fragment made from a moderately welded tuff with hematitic inclusions. One inclusion is more than 1.0 cm in diameter. The upper portion of the Spears Formation, which outcrops near Gallinas Springs Pueblo, has been described as a hematite-stained conglomeritic tuff (Brown, 1972).

One reddish brown specimen from Trench 2, Unit 1, Level 12 (FS 1165) was identified as containing tellurobismuthite. This mineral has so far been reported from a single mine near Hatchita in Hidalgo County, New Mexico (Northrup 1959). Due to the unusual nature of this identification a sample was submitted to Robert H. Weber, Senior Geologist Emeritus at the New Mexico Bureau of Mines and Mineral Resources for further analysis. Microchemical tests showed strong reactions for Fe and negative for Te, Bi, and Cu (Robert H. Weber, letter 3/27/90). This second analysis suggests that FS 1165 contains hematite rather than tellurobismuthite. Due to the conflicting nature of the two analysis, further studies of FS 1165 were conducted. Analysis with a transmission electron microscope verified that FS 1165 is hematite.

A single specimen of jarosite was recovered from Trench 2, Unit 1. This specimen is a small bright yellow flake with a waxy feel and luster. Like hematite, jarosite is a fairly common mineral in the Socorro area (Northrop 1959).

An unusual purplish coating was observed on some sherds and rocks during excavation. This coating is most likely a natural mineral deposit, possibly derived from groundwater. Attempts to isolated the type of mineral through the comparison of a bulk sample of the rock with surface scrapings of the coating were unsuccessful. Some of the black spots on the rock fragments (probably rhyolitte) were tentatively identified as psilomelane, a hydrous manganese oxide. The inability to identify the purple coating is probably due to the small amount of material present combined with the difficulty in identifying manganese oxide based minerals through X-ray diffraction (Nancy McMilliam, personal communication 1990). Future analysis of this type of purple coating should be carried out using some energy dispersive techniques such as X-rays fluorescence.

Bibliography

Brown, David McKendree

1972 *Geology of the Southern Bear Mountains, Socorro County, New Mexico.* Unpublished MS thesis, Department of Geology, New Mexico Institute of Mining and Technology.

Downs, Elinor F.

1985 An Approach to Detecting and Identifying Blood Residues on Archaeological Stone Artifacts: A Feasibility Study. Ms. on file, Center for Materials Research in Archaeology and Ethnology. Massachusetts Institute of Technology, Cambridge.

Northrop, Stewart A.

1959 *Minerals of New Mexico.* University of New Mexico Press.

X-Ray Diffraction Lab				Operating conditions:		
Department of Earth Sciences				kV 40		
New Mexico State University				mA 25		
Dr. Nancy J. McMillan				scan rate	2°/min	
(505) 646-5000				full scale	100 cps	
				chart speed	20 mm/min	
				Analyst:	McMillan	
Name:	Dave Hill			Interpreted by: McMillan		
Sample No. FS-1165						
Minerals present:		Quartz				
		Tellurobismuthite		Bi_2Te_3, trigonal (?)		

d	2 theta	I/Io (all)	I/Io (min)	Mineral	d, Peak	
4.227	21.00	0.375	0.375	Qz	4.26	
3.330	26.75	1.000	1.000	Qz	3.34	
3.193	27.92	0.688	1.000	Bi_2Te_3	3.22	
2.447	36.70	0.438	0.438	Qz	2.46	
2.190	41.18	0.250	0.363	Bi_2Te_3	2.19	
2.159	41.80	0.250		?		

X-Ray Diffraction Lab				Operating conditions:		
Department of Earth Sciences				kV 40		
New Mexico State University				mA 25		
Dr. Nancy J. McMillan				scan rate	2°/min	
(505) 646-5000				full scale	200 cps	
				chart speed 20 mm/min		
				Analyst:	McMillan	
Name: Dave Hill				Interpreted by: McMillan		
Sample No. FS 1169						
Minerals present:		Quartz				
		Kaolinite				
		Hematite, but not common.		ε	Fe_2O_3	
d	2 theta	I/Io (all)	I/Io (min)	Mineral	d, Peak	
7.190	12.30	0.113	1.000	Kaol	7.17	
6.752	13.10	0.063		?		
4.458	19.90	0.081	0.717	Kaol?	4.48	
4.403	20.15	0.100	0.752	Kaol	4.37	
4.263	20.82	0.231	0.231	Qz	4.26	
4.168	21.30	0.075		?		
3.594	24.75	0.113	1.000	Kaol	3.58	
3.342	26.65	1.000	1.000	Qz	3.34	
2.450	36.65	0.125	0.125	Qz	2.46	
2.333	38.55	0.080	0.700	Kaol	2.34	
2.277	39.55	0.113	0.113	Qz	2.28	
2.232	40.38	0.088		Hm	2.24	
2.125	42.50	0.088	0.088	Qz	2.13	
1.975	45.92	0.065		Hm	1.98	
1.815	50.22	0.250	0.250	Qz	1.82	
1.670	54.92	0.100		?		
1.539	60.05	0.125	0.125	Qz ; Hm	1.54 ; 1.52	
1.485	62.48	0.050		Kaol ; Hm	1.49 ; 1.47	
	68-69			Qz		

X-Ray Diffraction Lab			Operating conditions:		
Department of Earth Sciences			kV	40	
New Mexico State University			mA	25	
Dr. Nancy J. McMillan			scan rate	2°/min	
(505) 646-5000			full scale	200 cps	
			chart speed	20 mm/min	
			Analyst:	McMillan	
Name: Dave Hill			Interpreted by: McMillan		
Sample No. FS 207					
Minerals present: Quartz					
	Kaolinite				
	Hematite, not common hematite, ε Fe_2O_3				
	(Possibly Tridymite? d = 4.10, 2θ = 21.68)				
d	2 theta	I/Io (all)	I/Io (min)	Mineral	d, Peak
7.161	12.35	0.171	0.665	Kaol	7.17
4.263	20.82	0.243	0.243	Qz	4.26
4.149	21.40	0.114		? Trid?	
3.580	24.85	0.257	1.000	Kaol	3.58
3.349	26.59	1.000	1.000	Qz	3.34
2.453	36.60	0.138	0.138	Qz & Hm	2.46 & 2.46
2.282	39.45	0.113	0.113	Qz	2.28
2.126	42.48	0.063	0.063	Qz	2.13
1.979	45.80	0.063	1.000	Hm	1.98
1.817	50.15	0.150	0.150	Qz	1.82
1.671	54.89	0.075		?	
1.666	55.09	0.075		?	
1.657	55.41	0.075		?	
1.539	60.06	0.138		Qz & Hm	1.54 & 1.52

X-Ray Diffraction Lab			Operating conditions:		
Department of Earth Sciences			kV	40	
New Mexico State University			mA	25	
Dr. Nancy J. McMillan			scan rate	2°/min	
(505) 646-5000			full scale	200 cps	
			chart speed	20 mm/min	
			Analyst:	McMillan	
Name: Dave Hill			Interpreted by: McMillan		
Sample No. FS 1031					
Minerals present:	Quartz				
	Kaolinite				
	Hematite, but not common hematite. ε Fe_2O_3				

d	2 theta	I/Io (all)	I/Io (min)	Mineral	d, Peak
7.167	12.34	0.08	0.56	Kaol	7.17
4.425	20.05	0.05		?	
4.360	20.35	0.04	0.78	Kaol	4.37
4.237	20.95	0.21	0.21	Qz	4.26
3.570	24.92	0.15	100	Kaol	3.58
3.330	26.75	1.00	1.00	Qz	3.34
2.499	35.90	0.05	0.39	Kaol	2.50
2.449	36.66	0.11	0.11	Qz & Hm	2.46 & 2.46
2.316	38.85	0.08		?	
2.274	39.60	0.12	0.12	Qz	2.28
2.231	40.40	0.07	0.67	Hm	2.24
2.119	42.64	0.07	0.07	Qz	2.13
1.979	45.81	0.08	1.00	Hm	1.98
1.818	50.13	0.15	0.15	Qz	1.82
1.538	60.10	0.12	0.12	Qz & Hm	1.54 & 1.52
1.483	62.60	0.07	0.39	Kaol & Hm	1.49 & 1.47
1.381	67.80	0.07	0.07	Qz	1.38
1.371	68.34	0.12	0.12	Qz	1.37

X-Ray Diffraction Lab			Operating conditions:		
Department of Earth Sciences			kV 40		
New Mexico State University			mA 25		
Dr. Nancy J. McMillan			scan rate	2°/min	
(505) 646-5000			full scale	100 cps	
			chart speed	20mm/min	
			Analyst:	McMillan	
Name:	Dave Hill		Interpreted by: McMillan		
Sample No. FS-1160					
Minerals present:	Jarosite	$KFe^{3+}_3(SO_4)_2(OH)_6$			
		yellow-brown when	fresh		
		found in	Oro Grande mines.		

d	2 theta	I/Io (all)	I/Io (min)	Mineral	d, Peak	
6.021	14.70	0.278	0.278	Jar	5.93	
5.694	15.58	0.259		?		
5.121	17.30	0.593	0.593	Jar	5.09	
4.318	20.55	0.167		?		
3.675	24.20	0.148	0.148	Jar	3.65	
3.367	26.45	0.185		?		
3.135	28.45	0.852	0.852	Jar	3.11	
3.097	28.80	1.000	1.000	Jar	3.08	
2.991	29.85	0.185		?		
2.864	31.20	0.167		?		
2.820	31.70	0.185		?		
2.547	35.20	0.259		?		
2.263	39.80	0.259	0.259	Jar	2.29	
1.988	45.60	0.463	0.463	Jar	1.98	
1.836	49.60	0.352	0.352	Jar	1.83	
1.487	62.39	0.222		?		
1.345	69.90	0.204		?		

X-Ray Diffraction Lab				Operating conditions:		
Department of Earth Sciences				kV 40		
New Mexico State University				mA 25		
Dr. Nancy J. McMillan				scan rate	2°/min	
(505) 646-5000				full scale	200 cps	
				chart speed 20 mm/min		
				Analyst:	McMillan	
Name:	Dave Hill			Interpreted by: McMillan		
Sample No.	FS 682-	bulk sample				
Minerals present:		Quartz				
		Plagioclase	(probably	Ab35 An65)		
		Orthoclase				
d	2 theta	I/Io (all)	I/Io (min)	Mineral	d, Peak	
4.267	20.80	0.217	0.217	Qz	4.26	
3.795	23.42	0.072	1.000	Or	3.80	
3.469	25.66	0.072		Anal? Psil?	3.43? 3.46?	
3.348	26.60	1.000	1.000	Qz & Or	3.34 & 3.33	
3.229	27.60	0.101	1.000	Pl	3.23	
3.209	27.80	0.087	0.861	Pl	3.20	
2.994	29.82	0.051	0.708	Or	3.00	
2.943	30.34	0.051	0.508	Pl	2.95	
2.926	30.52	0.051		Anal?	2.93?	
2.896	30.85	0.051		?		
2.600	34.46	0.058		?		
2.576	34.79	0.058		?		
2.458	36.52	0.072	0.072	Qz	2.46	
2.285	39.40	0.058	0.058	Qz	2.28	
2.240	40.22	0.043		Anal?	2.23	
2.129	42.43	0.080	0.080	Qz	2.13	
1.981	45.75	0.058		?		
1.819	50.10	0.130	0.130	Qz	1.82	
1.674	54.80	0.051		?		
1.543	59.90	0.101	0.101	Qz	1.54	

POSSIBLE MINERALS: Analcite - based on 3 weak peaks
Psilomelane - one peak match only
= Romanechite
$BaMn^{2+}Mn_8^{4+}O_{16}(OH)_4$

X-Ray Diffraction Lab		Operating conditions:	
Department of Earth Sciences		kV	40
New Mexico State University		mA	25
Dr. Nancy J. McMillan		scan rate	2°/min
(505) 646-5000		full scale	200
		chart speed	20mm/min
		Analyst:	McMillan
Name: Dave Hill		Interpreted by:	McMillan

Sample No. FS 682 - sample filed from pale purple-tan surface (not dark area)

Minerals present: Quartz

Plagioclase (probably $Ab_{35}An_{65}$)

d	2 theta	I/Io (all)	I/Io (min)	Mineral	d, Peak	
4.269	20.79	0.145	0.290	Qz	4.26	
4.055	21.90	0.096	0.096	Pl	4.04	
3.348	26.60	0.500	1.000	Qz	3.34	
3.209	27.78	1.000	1.000	Pl	3.21	
2.463	36.45	0.120	0.240	Qz	2.46	
2.137	42.25	0.301	0.600	Qz	2.13	
1.543	59.90	0.145	0.290	Qz	1.54	
1.372	68.32	0.096	0.192	Qz	1.38	

X-Ray Diffraction Lab				Operating conditions:		
Department of Earth Sciences				kV 40		
New Mexico State University				mA 25		
Dr. Nancy J. McMillan				scan rate	2°/min	
(505) 646-5000				full scale	100cps	
				chart speed 20mm/min		
				Analyst:	McMillan	
Name:	Dave Hill			Interpreted by: McMillan		
Sample No.	FS-682-Dark					
Minerals present:		Plagioclase				
		Orthoclase				
		Psilomelane (?)				
d	2 theta	I/Io (all)	I/Io (min)	Mineral	d, Peak	
8.623	10.25	0.148		?		
4.553	19.48	0.130		?		
4.521	19.62	0.130		?		
4.308	20.60	0.167		?		
4.227	21.00	0.139		Or	4.23	
4.096	21.68	0.185		?		
3.810	23.32	0.155		Or	3.78	
3.490	25.50	0.111		Psil ?	3.48	
3.373	26.40	0.611		?		
3.235	27.55	1.000		Or ? Pl	3.24 & 3.23	
3.201	27.85	0.407		Pl	3.20	
3.092	28.85	0.130		?		
2.869	31.15	0.130		Psil?	2.87	
2.720	32.90	0.130		?		
2.533	35.41	0.130		?		
2.197	41.05	0.111		Psil?	2.19	
2.152	41.95	0.155		?		
1.971	46.00	0.222		?		

Note: Small sample size may be part of the problem.
26.40° peak has not been matched. May be quartz? @ 26.6°?

APPENDIX E

PETROGRAPHIC ANALYSIS OF SELECTED CERAMICS FROM GALLINAS SPRINGS PUEBLO (LA 1178)

APPENDIX E

PETROGRAPHIC ANALYSIS OF SELECTED CERAMICS FROM GALLINAS SPRINGS PUEBLO (LA 1178)

David V. Hill

INTRODUCTION

A sample of ten sherds were submitted for petrographic analysis. These sherds were selected from collections derived from two excavations carried out at Gallinas Springs Pueblo (LA 1178, LA 1180). The first of these excavations was conducted in 1977 by the University of New Mexico, Department of Anthropology, archaeological field school, under the direction of Joseph Tainter. The second excavation was conducted in 1987 by archaeologists from Chambers Group, Inc., under the direction of Jack Bertram.

Two sherds of each of the dominant ceramics types were selected for analysis. Four additional sherds were also selected as they were thought to represent trade items. The ceramic types represented by two sherds were; Magdalena Black on white, Magdalena Plain Utility/Obliterated Corrugated, and Magdalena Black on red/Magdalena Polychrome. Individual sherds of Alpha Glaze Polychrome (Acoma Glaze "A" Polychrome), Playas Red Incised, Chupadero Black on white, and an unidentified Cibola Whiteware were also analyzed.

The petrographic sample preparation and analysis was conducted at the Department of Earth Sciences, New Mexico State University, Las Cruces. Analysis of the petrographic sample was conducted in three stages. The first stage consisted of examination of each sample and narrative description of each sherd. Identification of the mineral grains was done at this time. The second phase consisted of point counting of each sample that was of a sufficient size for one hundred fifty points each. Two sherds were too small to complete a full count on and were counted for a lesser number. When rock fragments or isolated mineral grains were encountered, X and Y measurements were made of each one. The point counting and measurement data are presented in Tables E.1 and E.2. A third phase consisted of visual comparison to each of the thin sections to determine similarities between the sherds.

RESULTS OF ANALYSIS

The samples of Magdalena Black on white, Magdalena Plain Utility/Obliterated Corrugated and Magdalena Black on red/Magdalena Polychrome appear to have a similar paste and temper to one another. The paste of these sherds ranges from a medium brown to almost black. The past is filled with abundant fine angular mineral grains, predominantly quartz, plagioclase, and sanidine. Due to the representation of these minerals in the crushed rock used as temper,

Table E.1

PETROGRAPHIC ANALYSIS POINT COUNT DATA

FS#	I.D.	TYPE	CRUSHED ROCK RHYOLITE	SANIDINE	PLAGIOCLASE	ORTHOCLASE	SHERD	PASTE	VOID
835	U	Magdalena B/w	22	–	1	–	–	116	11
146	P	Magdalena B/w	33	3	–	–	–	109	5
106	S	Magdalena Obliterated Corrugated	18	3	–	–	–	125	4
1/	B	Magdalena Plain Utility	14	–	–	–	–	59	2 2/
843	W	Magdalena Polychrome	9	–	–	–	–	90	1 3/
157	Q	Magdalena B/r	21	–	1	1	–	124	3
673	V	Playas Red Incised	8	8	–	–	–	134	–
353	#2	Chupadero B/w	–	–	1	–	3	142	4
505	#3	Alpha Glaze Polychrome	–	–	–	–	12	134	4
1138	#1	Cibola Whiteware	–	–	–	–	3	145	2

1/ This is a sherd from the 1977 field school collections; all other from 1987 mitigation.

2/ Short count; N = 75.

3/ Short count; N = 100.

Table E.2

PETROGRAPHIC ANALYSIS TEMPER PARTICLE SIZE DATA

FS#	I.D.	TYPE	CRUSHED ROCK RHYOLITE	SANIDINE	PLAGIOCLASE	ORTHOCLASE	SHERD
835	U	Magdalena B/w	.07/.07	–	(.08x.12)	–	–
146	P	Magdalena B/w	.05/.05	4.6/.02	–	–	–
106	S	Magdalena Obliterated Corrugated	.03/.04	.03/.07	–	–	–
1/	B	Magdalena Plain Utility	.04/.03	–	–	–	–
843	W	Magdalena Polychrome	.04/.04	–	–	–	–
157	Q	Magdalena B/r	.11/.33	–	(.01x.03)	(.01x.05)	–
673	V	Playas Red Incised	.08/.05	.05/.05	–	–	–
353	#2	Chupadero B/w	–	–	(.45X.23)	–	.13/.13
505	#3	Alpha Glaze Polychrome	–	–	–	–	.08/.15
1138	#1	Cibola Whiteware	–	–	–	–	.17/.12

1/ This is a sherd from the 1977 field school collections; all other from 1987 mitigation.

Sample average/sample standard deviation measurements are is square millimeters.

it is unknown whether these smaller grains are a natural constituent of the ceramic clay or simply small temper particles. The rock type used for pottery temper is a rhyolite or latite porphyry. This rock type has a brownish cryptocrystalline groundmass and contains phenocrysts of sanidine with minor amounts of plagioclase. Based on optic axis determinations, the plagioclase falls into the oligoclase range. Some brown biotite was also observed in the groundmass and was often altered to hematite. All of these minerals are found in both the rock fragments and as isolated mineral grains. Isolated grains of pyroxene, probably augite, were observed in the Magdalena Black on red/Magdalena Polychrome sherds. These sherds also had a much darker paste than the others sharing the same type of temper.

The Playas Red Incised sherd was also tempered using a rhyolite porphyry. However, this sample was compositionally quite different from the other sherds tempered with rhyolite porphyry. The paste of this sherd is much lighter in color and contains only a few silt sized sparse rounded quartz inclusions. The rock fragments and the sanidine and plagioclase phenocrysts within them, are much larger than in the other sherds tempered using crushed rhyolite porphyry. Isolated fragments of secondary chalcedony and fragments of spherulitic texture. This texture is characterized by concentrically arranged radial growths of acicular crystals forming sphereoids. A basalt fragment containing laths of plagioclase with a distinctive trachyitic texture was also present. This basalt fragment could have come from either xenoliths that were blown out during the eruption of the rhyolite or contamination from a later volcanic eruption near the locality from where the temper was collected.

Two sherds of Playas Red Incised from Fort Bliss, Texas were tempered using crushed alkali granite porphyry, a rock type that is available in the nearby Franklin Mountains (Hill, 1988). This variation in ceramic temper between the Gallinas Springs and Fort Bliss specimens shows over just how large a region this type was produced.

Tuffs and flows of rhyolitic and latitic composition make up much of the Mogollon-Datil Volcanic Field (Elston, et. al., 1976). While several ashflow tuffs have been recognized in the region, differentiating between them at isolated outcrops and presumably when they are ground up and used as ceramic temper is quite difficult (Osburn and Chapin, 1983:197). Tuffs outcrop fairly close to Gallinas Springs Pueblo and as such would have been easily available to potters (Brown, 1972). The similarity of the paste and temper characteristics of the sherds of Magdalena Black on white, Magdalena Plain Utility/Obliterated Corrugated and Magdalena Black on red/Magdalena Polychrome suggests that they were all manufactured using the same materials and possibly at the same place. The presence of rhyolite porphyry in Magdalena Black on white from Gallinas Springs Pueblo has been recognized previously (Warren, 1974). The only other sherd of Magdalena Black on white, derived from FS 6772, an El Paso Phase structure located at Fort Bliss, Texas, was tempered using sands derived from rhyolitic tuffs that contained sanidine, quartz, and green hornblende (Hill, 1988). This variation in temper indicates that Gallinas Springs Pueblo was not the only source of Magdalena Black on white, and that carbon painted whitewares in southern New Mexico and western Texas relate to a larger phenomenon.

The other three sherds in the petrographic sample were tempered using crushed potsherds. The sherd of Alpha Glaze Polychrome (Acoma Glaze "A" Polychrome), has a brownish paste

with sparse rounded quartz grains that are most likely a natural constituent of the clay used in making the vessel. The temper of this vessel is derived predominately from sherds that came from the same type of vessel. Some of the sherd temper did come from vessels with a slightly sandier paste. Also, a few of the sherd temper particles in this vessel came from a much coarse ware with a black paste that was tempered using crushed sandstone. The sandstone contained predominately quartz with some orthoclase.

The sherd of Cibola Whiteware has a very fine gray paste with sparse rounded silt sized quartz grains. The sherd temper is derived from vessels that were compositionally identical to the paste of the current specimen. A single grain of chalcedony is also present in this sample.

The sherd of Chupadero Black on white was also tempered using crushed sherds. These sherds are quite dark with coarse sandstone temper much like those in the Alpha Polychrome specimen. The sandstone contains quartz, orthoclase, and minor sanidine. Isolated grains of sanidine are also present in the paste.

CONCLUSIONS

The ceramic industry of Gallinas Springs Pueblo apparently produced; Magdalena Plain Utility/Obliterated Corrugated and Magdalena Black on white. Magdalena Black on red and Magdalena Polychrome, in spite of their slight compositional differences from these other types, were probably also produced in the area as well. As this is the first study of the composition of ceramics from this region, the regional variation in ceramic temper is unknown. Only more petrographic studies, combined with analysis of ceramic pastes using such techniques as x-ray fluorescence will be necessary in order to better define what are pueblo specific ceramic products and which are not.

The other sherds show the range of social contacts and/or range of mobility of the inhabitants of Gallinas Springs Pueblo.

REFERENCES

Brown, David M.
1972 *Geology of the Southern Bear Mountains, Socorro County, New Mexico.* Unpublished MS thesis, Department of Geology, New Mexico Institute of Mining and Technology.

Elston, Wolfgang E., Rodney Rhodes, Peter J. Coney, and Edmond J. Deal
1976 Progress Report on the Mogollon Volcanic Field, Southwestern New Mexico, No. 3, Surface Expression of a Pluton. In *Cenozoic Volcanism in Southwestern New Mexico,* edited by Wolfgang E. Elston and Stewart A. Northrop, pp. 3-28. New Mexico Geological Society, Special Publication No. 5.

Hill, David V.
1988 Petrographic Analysis of Loop 375 Ceramics (Phase II). In *Loop 375 Archaeological Project Fort Bliss Maneuver Area I, El Paso County, Texas*, by T.C. O'Laughlin, V.L. Scarborough, T.B. Graves, and D. Martin. Appendix H. Department of Sociology and Anthropology, The University of Texas at El Paso.

Osburn, Glenn R. and Charles E. Chapin
1983 Ash-Flow Tuffs and Cauldrons in Northeast Mogollon-Datil Volcanic Field: A Summary. In *Socorro Region II. New Mexico Geological Society, Thirty-Fourth Annual Field Conference*, pp. 197-217, edited by Charles E. Chapin.

APPENDIX F

LITHICS DATA

TABLE OF CONTENTS

Appendix F.1

Lithic Rough Sort Data

Appendix F.1

GALLINAS LITHICS - RHYOLITE

Trench. Stratum	VERY BIG Com	VERY BIG Inc	BIG Com	BIG Inc	MEDIUM Com	MEDIUM Inc	SMALL Com	SMALL Inc	TINY Com	TINY Inc	JUNK
1.1	0	0	1	4	0	2	0	0	0	0	6
1.2	1	0	1	7	1	3	0	3	0	0	3
1.3	0	1	1	2	4	2	0	0	0	0	4
1.4	0	0	0	0	2	1	0	1	0	0	3
2.1	0	0	0	0	1	4	0	2	0	0	0
2.2	0	0	1	2	1	6	1	2	0	0	11
2.3	2	0	5	7	4	10	1	3	0	0	61
2.4	2	0	11	21	6	23	4	8	0	0	4
2.5	0	0	3	2	3	4	2	8	0	0	2
2.6	0	1	2	0	0	1	0	0	0	0	2
3.1	1	0	5	14	3	13	4	8	0	0	15
3.2	0	0	3	6	4	8	2	6	0	0	20
4.1	0	0	0	6	0	8	1	3	0	0	3
4.2	0	0	2	2	0	4	1	3	0	0	9
5.1	0	2	1	11	2	5	0	1	0	0	60
5.2	0	0	0	3	0	6	1	5	0	0	42
6.1	0	0	0	5	1	1	1	1	0	0	6
6.2	0	0	0	2	1	3	1	3	0	0	10
7.1	1	3	8	12	3	9	4	4	0	0	80
7.2	2	2	7	15	2	11	2	13	0	0	91
8.1	3	2	12	22	6	19	7	19	0	0	37
8.2	2	0	2	13	4	10	2	9	0	0	17
8.3	0	0	1	4	2	7	1	3	0	0	20
8.4	0	1	3	11	1	6	3	6	0	0	99
8A.1	0	1	0	6	2	7	0	6	0	0	59
8A.2	0	0	0	3	1	2	0	2	0	0	23
9.1	0	0	4	8	0	8	2	5	0	0	33
9.2	2	2	4	16	4	15	1	8	0	0	68
9.3	1	2	1	8	0	5	1	4	0	0	35
10.1	1	3	20	38	22	30	5	20	0	0	78
10.2	1	0	12	17	12	18	6	9	0	0	18
11	0	0	4	6	2	0	0	0	0	0	3
13	0	0	0	0	0	1	0	0	0	0	0
14	0	1	0	1	0	1	0	0	0	0	3
16	0	0	2	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0
18	0	0	1	0	0	0	0	0	0	0	0

Appendix F.1
(continued)

GALLINAS LITHICS - CHERT

Trench. Stratum	VERY BIG Complete	VERY BIG Incomplete	BIG Complete	BIG Incomplete	MEDIUM Complete	MEDIUM Incomplete	SMALL Complete	SMALL Incomplete	TINY Complete	TINY Incomplete
1.1	0	0	0	0	0	1	0	0	0	0
1.2	0	0	0	1	0	1	0	0	0	0
1.3	0	0	0	0	0	1	0	0	0	0
1.4	0	0	0	0	0	0	0	0	0	0
2.1	0	0	0	1	0	0	0	0	0	0
2.2	0	0	0	1	1	1	0	0	0	0
2.3	0	0	0	0	2	1	1	0	0	0
2.4	0	0	1	1	0	3	0	3	0	0
2.5	0	0	0	0	0	1	0	3	0	0
2.6	0	0	0	0	0	1	0	0	0	0
3.1	0	0	0	1	0	0	0	1	0	0
3.2	0	0	0	0	1	4	0	1	0	0
4.1	0	0	0	0	1	1	0	1	0	0
4.2	0	0	0	0	0	1	0	2	0	0
5.1	0	0	0	0	0	0	0	0	0	0
5.2	0	0	0	1	0	1	0	2	0	0
6.1	0	0	1	0	0	0	0	0	0	0
6.2	0	0	0	0	1	1	0	0	0	0
7.1	0	0	1	1	1	1	1	1	0	0
7.2	0	0	0	0	0	1	0	0	0	0
8.1	0	0	0	0	2	4	4	3	0	0
8.2	0	0	0	0	0	1	0	3	0	0
8.3	0	0	0	2	0	2	0	1	0	0
8.4	0	0	0	0	0	0	0	1	0	0
8A.1	0	0	0	0	0	1	0	0	0	0
8A.2	0	0	0	2	0	1	0	0	0	0
9.1	0	0	0	0	0	0	0	0	0	0
9.2	0	0	0	3	0	5	1	4	0	0
9.3	0	0	1	1	1	2	1	0	0	0
10.1	0	0	0	0	1	11	1	4	0	0
10.2	0	0	1	1	1	6	0	1	0	0
11	0	0	0	0	0	0	0	1	0	0
13	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	1	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	1	0	0
18	0	0	1	0	0	0	0	0	0	0

Appendix F.1
(continued)

GALLINAS LITHICS - GRANTS OBSIDIAN

Trench. Stratum	VERY BIG Complete	VERY BIG Incomplete	BIG Complete	BIG Incomplete	MEDIUM Complete	MEDIUM Incomplete	SMALL Complete	SMALL Incomplete	TINY Complete	TINY Incomplete
1.1	0	0	0	0	0	1	0	0	0	0
1.2	0	0	0	0	0	0	0	0	0	0
1.3	0	0	0	0	0	1	0	1	0	0
1.4	0	0	0	0	0	0	0	0	0	0
2.1	0	0	0	0	0	0	0	0	0	0
2.2	0	0	0	0	0	0	0	0	0	0
2.3	0	0	0	0	0	2	1	2	0	0
2.4	0	0	0	0	0	0	0	3	0	0
2.5	0	0	0	0	0	0	0	0	0	0
2.6	0	0	0	0	0	0	0	0	0	0
3.1	0	0	0	0	0	0	0	2	0	0
3.2	0	0	0	0	0	0	2	0	0	0
4.1	0	0	0	0	0	0	0	0	0	0
4.2	0	0	0	0	0	0	0	2	0	0
5.1	0	0	0	0	0	0	0	0	0	0
5.2	0	0	0	0	0	0	0	0	0	0
6.1	0	0	0	0	0	0	1	0	0	0
6.2	0	0	0	0	0	0	0	0	0	0
7.1	0	0	0	0	0	1	0	2	0	0
7.2	0	0	0	0	0	1	0	0	0	0
8.1	0	0	0	0	0	3	10	5	0	0
8.2	0	0	0	0	1	1	1	0	0	0
8.3	0	0	0	0	0	0	0	2	0	0
8.4	0	0	0	0	0	1	1	1	0	0
8A.1	0	0	0	0	0	0	1	0	0	0
8A.2	0	0	0	0	0	1	0	0	0	0
9.1	0	0	0	0	0	0	1	0	0	0
9.2	0	0	0	0	0	1	0	3	0	0
9.3	0	0	0	0	0	0	0	0	0	0
10.1	0	0	0	0	1	5	3	8	0	0
10.2	0	0	0	0	0	5	1	3	0	0
11	0	0	0	0	0	0	1	1	0	0
13	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0

Appendix F.1
(continued)

GALLINAS LITHICS - JEMEZ OBSIDIAN

Trench. Stratum	VERY BIG		BIG		MEDIUM		SMALL		TINY	
	Complete	Incomplete	Complete	Incomplete	Complete	Incomplete	Complete	Incomplete	Complete	Incomplete
1.1	0	0	0	0	0	0	0	1	0	0
1.2	0	0	0	0	0	0	0	0	0	0
1.3	0	0	0	0	0	0	0	0	0	0
1.4	0	0	0	0	0	0	0	0	0	0
2.1	0	0	0	0	0	0	0	0	0	0
2.2	0	0	0	0	0	0	0	0	0	0
2.3	0	0	0	0	0	0	0	0	0	0
2.4	0	0	0	1	0	1	0	1	0	0
2.5	0	0	0	0	0	0	0	1	0	0
2.6	0	0	0	0	0	0	0	0	0	0
3.1	0	0	0	0	0	0	0	0	0	0
3.2	0	0	0	0	0	0	0	0	0	0
4.1	0	0	0	0	0	0	0	0	0	0
4.2	0	0	0	0	1	0	0	1	0	0
5.1	0	0	0	0	0	0	0	0	0	0
5.2	0	0	0	0	0	0	0	0	0	0
6.1	0	0	0	0	0	1	0	0	0	0
6.2	0	0	0	0	0	0	0	0	0	0
7.1	0	0	0	0	0	0	0	0	0	0
7.2	0	0	0	0	0	0	0	0	0	0
8.1	0	0	0	0	0	0	2	3	0	0
8.2	0	0	0	0	0	1	0	1	0	0
8.3	0	0	0	0	0	0	0	0	0	0
8.4	0	0	0	0	0	0	0	1	0	0
8A.1	0	0	0	0	0	0	0	0	0	0
8A.2	0	0	0	0	0	0	0	0	0	0
9.1	0	0	0	0	0	0	0	0	0	0
9.2	0	0	0	0	0	0	0	0	0	0
9.3	0	0	0	0	0	0	0	2	0	0
10.1	0	0	0	0	0	0	0	0	0	0
10.2	0	0	0	0	0	1	0	1	0	0
11	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0

Appendix F.1
(continued)

GALLINAS LITHICS - OTHER

Trench. Stratum	VERY BIG		BIG		MEDIUM		SMALL		TINY	
	Complete	Incomplete	Complete	Incomplete	Complete	Incomplete	Complete	Incomplete	Complete	Incomplete
1.1	0	0	0	0	0	0	0	0	0	0
1.2	0	0	0	0	0	0	0	0	0	0
1.3	0	0	0	0	0	0	0	0	0	0
1.4	0	0	0	0	0	0	0	0	0	0
2.1	0	0	0	0	0	0	0	0	0	0
2.2	0	0	0	1	0	0	0	0	0	0
2.3	0	0	0	2	0	0	0	0	0	0
2.4	0	0	1	0	2	1	0	0	0	0
2.5	0	0	0	0	0	0	0	0	0	0
2.6	0	0	0	0	0	0	0	0	0	0
3.1	0	0	0	0	0	0	0	0	0	0
3.2	0	0	0	0	0	0	0	0	0	0
4.1	0	0	0	1	0	0	0	1	0	0
4.2	0	0	0	0	0	0	0	0	0	0
5.1	0	0	0	0	0	0	0	0	0	0
5.2	0	0	0	0	0	0	0	0	0	0
6.1	0	0	0	0	0	0	0	0	0	0
6.2	0	0	0	0	0	0	0	0	0	0
7.1	0	0	0	0	0	0	0	0	0	0
7.2	0	0	0	0	0	0	1	0	0	0
8.1	1	0	0	0	0	3	0	0	0	0
8.2	0	0	0	0	0	1	0	1	0	0
8.3	0	0	0	0	0	1	0	0	0	0
8.4	0	0	0	1	0	0	0	0	0	0
8A.1	0	0	0	0	1	1	0	0	0	0
8A.2	0	0	0	0	1	0	0	0	0	0
9.1	0	0	1	0	2	2	0	1	0	0
9.2	0	1	1	3	1	0	0	1	0	0
9.3	0	0	0	0	0	0	0	1	0	0
10.1	0	0	4	6	1	2	0	0	0	0
10.2	0	0	1	2	0	2	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0
18	0	0	1	0	0	0	0	0	0	0

Appendix F.1
(continued)

GALLINAS LITHICS - PETRIFIED WOOD

Trench.	VERY BIG		BIG		MEDIUM		SMALL		TINY	
Stratum	Complete	Incomplete	Complete	Incomplete	Complete	Incomplete	Complete	Incomplete	Complete	Incomplete
1.1	0	0	0	0	0	0	0	0	0	0
1.2	0	0	0	0	0	0	0	0	0	0
1.3	0	0	0	0	0	0	0	0	0	0
1.4	0	0	0	0	0	0	0	0	0	0
2.1	0	0	0	0	0	0	0	0	0	0
2.2	0	0	0	0	0	0	0	0	0	0
2.3	0	0	0	0	0	0	0	1	0	0
2.4	0	0	0	0	0	0	0	0	0	0
2.5	0	0	0	0	0	0	0	0	0	0
2.6	0	0	0	0	0	0	0	0	0	0
3.1	0	0	0	0	0	0	0	0	0	0
3.2	0	0	0	0	0	0	0	0	0	0
4.1	0	0	0	0	0	0	0	0	0	0
4.2	0	0	0	0	0	0	0	0	0	0
5.1	0	0	0	0	0	0	0	0	0	0
5.2	0	0	0	0	0	0	0	0	0	0
6.1	0	0	0	0	0	0	0	0	0	0
6.2	0	0	0	0	0	0	0	0	0	0
7.1	0	0	0	0	0	0	0	0	0	0
7.2	0	0	0	0	0	0	0	0	0	0
8.1	0	0	0	0	0	1	0	0	0	0
8.2	0	0	0	0	0	0	0	0	0	0
8.3	0	0	0	0	0	0	0	0	0	0
8.4	0	0	0	0	0	0	0	0	0	0
8A.1	0	0	0	0	0	0	0	0	0	0
8A.2	0	0	0	0	0	0	0	0	0	0
9.1	0	0	0	0	0	0	0	0	0	0
9.2	0	0	0	0	0	0	0	0	0	0
9.3	0	0	0	0	0	0	0	0	0	0
10.1	0	0	0	0	0	0	0	1	0	0
10.2	0	0	0	0	0	1	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0

Appendix F.1
(continued)

GALLINAS LITHICS - UNKNOWN OBSIDIAN

Trench. Stratum	VERY BIG Complete	VERY BIG Incomplete	BIG Complete	BIG Incomplete	MEDIUM Complete	MEDIUM Incomplete	SMALL Complete	SMALL Incomplete	TINY Complete	TINY Incomplete
1.1	0	0	0	0	0	0	0	0	0	0
1.2	0	0	0	0	0	0	0	0	0	0
1.3	0	0	0	0	0	0	0	0	0	0
1.4	0	0	0	0	0	0	0	0	0	0
2.1	0	0	0	0	0	0	0	0	0	0
2.2	0	0	0	0	0	0	0	0	0	0
2.3	0	0	0	0	0	0	0	0	0	0
2.4	0	0	0	0	0	0	0	0	0	0
2.5	0	0	0	0	0	0	0	0	0	0
2.6	0	0	0	0	0	0	0	0	0	0
3.1	0	0	0	0	0	0	0	0	0	0
3.2	0	0	0	0	0	0	0	0	0	0
4.1	0	0	0	0	0	0	0	0	0	0
4.2	0	0	0	0	0	0	0	0	0	0
5.1	0	0	0	0	0	0	0	0	0	0
5.2	0	0	0	0	0	0	0	0	0	0
6.1	0	0	0	0	0	0	0	0	0	0
6.2	0	0	0	0	0	0	0	0	0	0
7.1	0	0	0	0	0	1	0	0	0	0
7.2	0	0	0	0	0	0	0	0	0	0
8.1	0	0	0	0	0	0	3	4	0	0
8.2	0	0	0	0	1	0	0	0	0	0
8.3	0	0	0	0	0	0	0	0	0	0
8.4	0	0	0	0	0	0	0	0	0	0
8A.1	0	0	0	0	1	0	0	0	0	0
8A.2	0	0	0	0	0	0	0	0	0	0
9.1	0	0	0	0	0	0	0	0	0	0
9.2	0	0	0	0	0	0	1	2	0	0
9.3	0	0	0	0	0	0	0	0	0	0
10.1	0	0	0	0	0	0	0	1	0	0
10.2	0	0	0	0	0	0	0	1	0	0
11	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0

Appendix F.1
(continued)

GALLINAS LITHICS - LIMESTONE

Trench. Stratum	VERY BIG Complete	VERY BIG Incomplete	BIG Complete	BIG Incomplete	MEDIUM Complete	MEDIUM Incomplete	SMALL Complete	SMALL Incomplete	TINY Complete	TINY Incomplete
1.1	0	0	0	0	0	0	0	0	0	0
1.2	0	0	0	0	0	0	0	0	0	0
1.3	0	0	0	0	0	0	0	0	0	0
1.4	0	0	0	0	0	0	0	0	0	0
2.1	0	0	0	0	0	0	0	0	0	0
2.2	0	0	0	0	0	0	0	0	0	0
2.3	0	0	0	0	0	0	0	0	0	0
2.4	0	0	0	0	0	0	0	0	0	0
2.5	0	0	0	0	0	0	0	0	0	0
2.6	0	0	0	0	0	0	0	0	0	0
3.1	0	0	0	0	0	0	1	0	0	0
3.2	0	0	0	0	0	0	0	0	0	0
4.1	0	0	0	0	0	0	0	0	0	0
4.2	0	0	0	0	0	0	0	0	0	0
5.1	0	0	0	0	0	0	0	0	0	0
5.2	0	0	0	0	0	0	0	0	0	0
6.1	0	0	0	0	0	0	0	0	0	0
6.2	0	0	0	0	0	0	0	0	0	0
7.1	0	0	0	0	0	0	0	0	0	0
7.2	0	0	0	0	0	0	0	0	0	0
8.1	0	0	0	0	0	0	0	0	0	0
8.2	0	0	0	0	0	0	0	0	0	0
8.3	0	0	0	0	0	0	0	0	0	0
8.4	0	0	0	0	2	0	0	0	0	0
8A.1	0	0	0	0	0	0	0	0	0	0
8A.2	0	0	0	0	0	0	0	0	0	0
9.1	0	0	0	0	0	0	0	0	0	0
9.2	0	0	0	0	0	0	0	0	0	0
9.3	0	0	0	0	0	0	0	0	0	0
10.1	2	2	0	0	0	0	0	0	0	0
10.2	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0

Appendix F.1
(continued)

GALLINAS LITHICS - OTHER OBSIDIAN

Trench. Stratum	VERY BIG		BIG		MEDIUM		SMALL		TINY	
	Complete	Incomplete	Complete	Incomplete	Complete	Incomplete	Complete	Incomplete	Complete	Incomplete
1.1	0	0	0	0	0	1	0	0	0	0
1.2	0	0	0	0	0	0	0	0	0	0
1.3	0	0	0	0	0	0	0	0	0	0
1.4	0	0	0	0	0	0	0	0	0	0
2.1	0	0	0	0	0	0	0	0	0	0
2.2	0	0	0	0	0	0	0	0	0	0
2.3	0	0	0	0	0	0	0	0	0	0
2.4	0	0	0	0	0	3	1	1	0	0
2.5	0	0	0	0	0	1	0	3	0	0
2.6	0	0	0	0	0	0	0	0	0	0
3.1	0	0	0	0	0	0	0	0	0	0
3.2	0	0	0	0	0	0	0	0	0	0
4.1	0	0	0	0	0	0	0	0	0	0
4.2	0	0	0	0	0	0	0	0	0	0
5.1	0	0	0	0	0	0	0	0	0	0
5.2	0	0	0	0	0	0	0	0	0	0
6.1	0	0	0	0	0	0	0	0	0	0
6.2	0	0	0	0	0	1	0	0	0	0
7.1	0	0	0	0	0	1	0	0	0	0
7.2	0	0	0	0	0	0	0	0	0	0
8.1	0	0	0	0	0	0	2	4	1	0
8.2	0	0	0	0	0	0	1	0	0	0
8.3	0	0	0	0	0	0	0	0	0	0
8.4	0	0	0	0	0	0	0	0	0	0
8A.1	0	0	0	0	0	1	0	0	0	0
8A.2	0	0	0	0	0	0	0	0	0	0
9.1	0	0	0	0	0	0	0	0	0	0
9.2	0	0	0	0	1	0	0	0	0	0
9.3	0	0	0	0	0	0	0	0	0	0
10.1	0	0	0	0	0	0	0	0	0	0
10.2	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	1	0	0
16	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	2	0	0

Appendix F-1
(continued)

GALLINAS LITHICS - QUARTZITE

Trench. Stratum	VERY BIG		BIG		MEDIUM		SMALL		TINY	
	Complete	Incomplete	Complete	Incomplete	Complete	Incomplete	Complete	Incomplete	Complete	Incomplete
1.1	0	0	0	0	0	0	0	0	0	0
1.2	0	0	0	0	0	0	0	0	0	0
1.3	0	0	0	0	0	1	0	0	0	0
1.4	0	0	0	0	0	0	0	0	0	0
2.1	0	0	0	0	0	0	0	0	0	0
2.2	0	0	0	0	0	0	0	0	0	0
2.3	0	0	0	0	0	0	0	1	0	0
2.4	0	0	0	1	0	1	0	1	0	0
2.5	0	0	0	0	0	0	0	1	0	0
2.6	0	0	0	0	0	0	0	0	0	0
3.1	0	0	0	1	0	1	0	0	0	0
3.2	0	0	0	0	0	1	0	0	0	0
4.1	0	0	0	0	0	0	0	0	0	0
4.2	0	0	0	0	0	0	0	0	0	0
5.1	0	0	0	0	0	1	0	0	0	0
5.2	0	0	0	0	0	1	0	0	0	0
6.1	0	0	0	0	0	0	0	0	0	0
6.2	0	0	0	0	0	0	0	0	0	0
7.1	0	0	0	0	0	0	0	1	0	0
7.2	0	0	0	0	1	0	1	0	0	0
8.1	0	0	1	2	1	2	2	3	0	0
8.2	0	1	0	1	0	0	0	0	0	0
8.3	0	0	0	0	0	0	0	0	0	0
8.4	0	0	0	1	1	0	0	0	0	0
8A.1	0	0	0	1	0	2	0	0	0	0
8A.2	0	0	0	0	0	0	0	0	0	0
9.1	0	0	0	3	1	0	0	0	0	0
9.2	0	0	0	1	1	1	0	3	0	0
9.3	0	0	1	0	0	3	0	0	0	0
10.1	0	0	0	3	2	4	1	1	0	0
10.2	0	0	1	0	3	1	2	1	0	0
11	0	1	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0
14	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0
18	0	0	0	1	0	0	0	0	0	0

Appendix F.2

Size and Material Distributions of Debitage Database Sample

SIZE AND MATERIAL DISTRIBUTIONS OF DEBITAGE DATABASE SAMPLE

Trench. Stratum	RHYOLITE					CHERT					GRANTS OBSIDIAN				
	Big	Med	Sm	Total	%	Big	Med	Sm	Total	%	Big	Med	Sm	Total	%
1.1	5	2	0	7	22.6%	0	1	0	1	20.0%	0	1	0	1	33.3%
1.2	8	4	3	15	48.4%	1	1	0	2	40.0%	0	0	0	0	0.0%
1.3	3	6	0	9	29.0%	0	1	1	2	40.0%	0	1	1	2	66.7%
Totals	16	12	3	31		1	3	1	5		0	2	1	3	
Percent	51.6%	38.7%	9.7%	77.5%		20.0%	60.0%	20.0%	12.5%		0.0%	66.7%	33.3%	7.5%	
2.1	0	5	2	7	4.8%	1	0	0	1	5.0%	0	0	0	0	0.0%
2.2	3	7	3	13	9.0%	1	2	0	3	15.0%	0	0	0	0	0.0%
2.3	12	14	4	30	20.7%	0	3	1	4	20.0%	0	2	3	5	62.5%
2.4	32	29	12	73	50.3%	2	3	3	8	40.0%	0	0	3	3	37.5%
2.5	5	7	10	22	15.2%	0	1	3	4	20.0%	0	0	0	0	0.0%
Totals	52	62	31	145		4	9	7	20		0	2	6	8	
Percent	35.9%	42.8%	21.4%	78.4%		20.0%	45.0%	35.0%	10.8%		0.0%	25.0%	75.0%	4.3%	
3.1	19	16	12	47	61.8%	1	0	1	2	25.0%	0	0	2	2	50.0%
3.2	9	12	8	29	38.2%	0	5	1	6	75.0%	0	0	2	2	50.0%
Totals	28	28	20	76		1	5	2	8		0	0	4	4	
Percent	36.8%	36.8%	26.3%	83.5%		12.5%	62.5%	25.0%	8.8%		0.0%	0.0%	100.0%	4.4%	
4.1	6	8	4	18	60.0%	0	2	1	3	50.0%	0	0	0	0	0.0%
4.2	4	4	4	12	40.0%	0	1	2	3	50.0%	0	0	2	2	100.0%
Totals	10	12	8	30		0	3	3	6		0	0	2	2	
Percent	33.3%	40.0%	26.7%	75.0%		0.0%	50.0%	50.0%	15.0%		0.0%	0.0%	100.0%	5.0%	
5.1	12	7	1	20	57.1%	0	0	0	0	0.0%	0	0	0	0	0.0%
5.2	3	6	6	15	42.9%	1	1	1	3	100.0%	0	0	0	0	0.0%
Totals	15	13	7	35		1	1	1	3		0	0	0	0	
Percent	42.9%	37.1%	20.0%	85.4%		33.3%	33.3%	33.3%	7.3%		0.0%	0.0%	0.0%	0.0%	
7.1	20	12	8	40	44.4%	2	2	2	6	85.7%	0	1	2	3	75.0%
7.2	22	13	15	50	55.6%	0	1	0	1	14.3%	0	1	0	1	25.0%
Totals	42	25	23	90		2	3	2	7		0	2	2	4	
Percent	46.7%	27.8%	25.6%	85.7%		28.6%	42.9%	28.6%	6.7%		0.0%	50.0%	50.0%	3.8%	

Appendix F.2
(continued)

QUARTZITE					OTHER IGNEOUS					SUMMARY				
Big	Med	Sm	Total	%	Big	Med	Sm	Total	%	Big	Med	Sm	Total	%
0	0	0	0	0.0%	0	0	0	0	0.0%	5	4	0	9	22.5%
0	0	0	0	0.0%	0	0	0	0	0.0%	9	5	3	17	42.5%
0	1	0	1	100.0%	0	0	0	0	0.0%	3	9	2	14	35.0%
0	1	0	1		0	0	0	0		17	18	5	40	
0.0%	100.0%	0.0%	2.5%		0.0%	0.0%	0.0%	0.0%		42.5%	45.0%	12.5%		
0	0	0	0	0.0%	0	0	0	0	0.0%	1	5	2	8	4.3%
0	0	0	0	0.0%	1	0	0	1	14.3%	5	9	3	17	9.2%
0	0	1	1	20.0%	2	0	0	2	28.6%	14	19	9	42	22.7%
1	1	1	3	60.0%	1	3	0	4	57.1%	36	36	19	91	49.2%
0	0	1	1	20.0%	0	0	0	0	0.0%	5	8	14	27	14.6%
1	1	3	5		4	3	0	7		61	77	47	185	
20.0%	20.0%	60.0%	2.7%		57.1%	42.9%	0.0%	3.8%		33.0%	41.6%	25.4%		
1	1	0	2	66.7%	0	0	0	0	0.0%	21	17	15	53	58.2%
0	1	0	1	33.3%	0	0	0	0	0.0%	9	18	11	38	41.8%
1	2	0	3		0	0	0	0		30	35	26	91	
33.3%	66.7%	0.0%	3.3%		0.0%	0.0%	0.0%	0.0%		33.0%	38.5%	28.6%		
0	0	0	0	0.0%	1	0	1	2	100.0%	7	10	6	23	57.5%
0	0	0	0	0.0%	0	0	0	0	2.5%	4	5	8	17	42.5%
0	0	0	0		1	0	1	2		11	15	14	40	
0.0%	0.0%	0.0%	0.0%		50.0%	0.0%	50.0%	5.0%		27.5%	37.5%	35.0%		
0	1	0	1	33.3%	0	0	0	0	0.0%	12	8	1	21	51.2%
0	1	1	2	66.7%	0	0	0	0	0.0%	4	8	8	20	48.8%
0	2	1	3		0	0	0	0		16	16	9	41	
0.0%	66.7%	33.3%	7.3%		0.0%	0.0%	0.0%	0.0%		39.0%	39.0%	22.0%		
0	0	1	1	33.3%	0	0	0	0	0.0%	22	15	13	50	47.6%
0	1	1	2	66.7%	0	0	1	1	100.0%	22	16	17	55	52.4%
0	1	2	3		0	0	1	1		44	31	30	105	
0.0%	33.3%	66.7%	2.9%		0.0%	0.0%	100.0%	1.0%		41.9%	29.5%	28.6%		

Appendix F.2
(continued)

SIZE AND MATERIAL DISTRIBUTIONS OF DEBITAGE DATABASE SAMPLE

Trench. Stratum	RHYOLITE					CHERT					GRANTS OBSIDIAN				
	Big	Med	Sm	Total	%	Big	Med	Sm	Total	%	Big	Med	Sm	Total	%
8.1	34	25	26	85	49.1%	0	6	7	13	56.5%	0	3	15	18	72.0%
8.2	15	14	11	40	23.1%	0	1	3	4	17.4%	0	1	1	2	8.0%
8.3	5	9	4	18	10.4%	2	2	1	5	21.7%	0	0	2	2	8.0%
8.4	14	7	9	30	17.3%	0	0	1	1	4.3%	0	1	2	3	12.0%
Totals	68	55	50	173		2	9	12	23		0	5	20	25	
Percent	39.3%	31.8%	28.9%	71.8%		8.7%	39.1%	52.2%	9.5%		0.0%	20.0%	80.0%	10.4%	
8A.1	6	9	6	21	72.4%	0	1	0	1	25.0%	0	0	1	1	50.0%
8A.2	3	3	2	8	27.6%	2	1	0	3	75.0%	0	1	0	1	50.0%
Totals	9	12	8	29		2	2	0	4		0	1	1	2	
Percent	31.0%	41.4%	27.6%	70.7%		50.0%	50.0%	0.0%	9.8%		0.0%	50.0%	50.0%	4.9%	
9.1	12	8	7	27	28.7%	0	0	0	0	0.0%	0	0	1	1	20.0%
9.2	20	19	9	48	51.1%	3	5	5	13	68.4%	0	1	3	4	80.0%
9.3	9	5	5	19	20.2%	2	3	1	6	31.6%	0	0	0	0	0.0%
Totals	41	32	21	94		5	8	6	19		0	1	4	5	
Percent	43.6%	34.0%	22.3%	64.8%		26.3%	42.1%	31.6%	13.1%		0.0%	20.0%	80.0%	3.4%	
10.1	58	52	25	135	64.6%	0	12	5	17	63.0%	0	6	11	17	65.4%
10.2	29	30	15	74	35.4%	2	7	1	10	37.0%	0	5	4	9	34.6%
Totals	87	82	40	209		2	19	6	27		0	11	15	26	
Percent	41.6%	39.2%	19.1%	69.9%		7.4%	70.4%	22.2%	9.0%		0.0%	42.3%	57.75	8.7%	

Appendix F.2
(continued)

QUARTZITE					OTHER IGNEOUS					SUMMARY				
Big	Med	Sm	Total	%	Big	Med	Sm	Total	%	Big	Med	Sm	Total	%
3	2	5	10	76.9%	0	3	0	3	42.9%	37	39	53	129	53.5%
1	0	0	1	7.7%	0	1	1	2	28.6%	16	17	16	49	20.3%
0	0	0	0	0.0%	0	1	0	1	14.3%	7	12	7	26	10.8%
1	1	0	2	15.4%	1	0	0	1	14.3%	16	9	12	37	15.4%
5	3	5	13		1	5	1	7		76	77	88	241	
38.5%	23.1%	38.5%	5.4%		14.3%	71.4%	14.3%	2.9%		31.5%	32.0%	36.5%		
1	2	0	3	100.0%	0	2	0	2	66.7%	7	14	7	28	68.3%
0	0	0	0	0.0%	0	1	0	1	33.3%	5	6	2	13	31.7%
1	2	0	3		0	3	0	3		12	20	9	41	
33.3%	66.7%	0.0%	7.3%		0.0%	100.0%	0.0%	7.3%		29.3%	48.8%	22.0%		
3	1	0	4	28.6%	1	4	1	6	46.2%	16	13	9	38	26.2%
1	2	3	6	42.9%	4	1	1	6	46.2%	28	28	21	77	53.1%
1	3	0	4	28.6%	0	0	1	1	7.7%	12	11	7	30	20.7%
5	6	3	14		5	5	3	13		56	52	37	145	
35.7%	42.9%	21.4%	9.7%		38.5%	38.5%	23.1%	9.0%		38.6%	35.9%	25.5%		
3	6	2	11	57.9%	10	3	0	13	72.2%	71	79	43	193	64.5%
1	4	3	8	42.1%	3	2	0	5	27.8%	35	48	23	106	35.5%
4	10	5	19		13	5	0	18		106	127	66	299	
21.1%	52.6%	26.3%	6.4%		72.2%	27.8%	0.0%	6.0%		35.5%	42.5%	22.1%		

Appendix F.3

Non-Formal Tools

Appendix F.3

NON-FORMAL TOOLS

Unit	Level	FS #	Material	Size	Debitage Type	Portion	Platform	Edge Angle	Edge Angle	Comments
Trench 1										
1	1a	902	Other Obsidian	Medium	Angular Debris	N/A	N/A	45-50	80	Multi purpose tool, 80° edge, slightly convex, 45° edge slightly convex and concave
3	1	903	Chert	Medium	Decortication flake	Distal	N/A	proximal 60, lateral 70-75	distal 45, lateral 35-40	Multi purpose tool, all edges and portions of dorsal surface retouched, edges straight to convex
3	2	940	Quartzite	Medium	Interior or biface thinning flake	Proximal	Multi-faceted	45-50		Utilized edge? slightly convex dorsal edge of platform highly prepared or used
3	2	940	Grants obsidian	Medium	Angular debris	N/A	N/A	80-85		Sraper and/or spokeshave, wear edge and portion of end, concave/convex
Trench 2										
1	6	1132	Rhyolite	Very big	Decortication flake	Complete	Cortical	75-80		Scraper and/or spokeshave, crude biface with wear, five large dorsal flake scars with some bilateral retouch
3	4	1106	Rhyolite	Medium	Interior flake	Medial	N/A	70		Battered; possible scraper, convex straight edge

Appendix F.3
(continued)

NON-FORMAL TOOLS

Unit	Level	FS #	Material	Size	Debitage Type	Portion	Platform	Edge Angle	Edge Angle	Comments
3	4	1106	Quarzite/ textured rhyolite	Medium	Angular debris	N/A	N/A	35-50		Utilized edge, irregular shape
1	8	1144	Rhyolite	Big	Decortication flake	Lateral	Single facet	35		Utilized slightly convex edge; bifacial lateral retouch
1	8	1144	Other obsidian	Medium	Decortication flake	Proximal	Cortical	20-25	60-75	Multi-purpose tool; 20^{o}-straight lateral edge. 60^{o}-concave lateral
1	8	1144	Other obsidian	Medium	Interior flake	Distal	N/A	30-40	65?	Multi-purpose tool; $30–40^{o}$ straight distal edge, 65^{o} concave lateral face
1	9	1148	Rhyolite	Big	Angular debris	N/A	N/A	30-35		Utilized, straight lateral edge
1	9	1148	Chert	Big	Interior flake	Complete	Single facet	30-40		Utilized lateral edge slightly concave/convex
1	11	1156	Jemez obsidian	Medium	Interior flake	Lateral/ medial	N/A	N/A		Biface fragment, appears to have broken during thinning
Trench 3										
2	9	44	Rhyolite	Big	Decortication flake	Medial	N/A	30		Utilized lateral edge(s)? straight to slightly convex

Appendix F.3
(continued)

NON-FORMAL TOOLS

Unit	Level	FS #	Material	Size	Debitage Type	Portion	Platform	Edge Angle	Edge Angle	Comments
2	10	52	Chert	Medium	Angular debris	N/A	N/A	65-75		Utilized edge, probable lateral(s)? straight, apparent retouch one face
Trench 4										
1	90-100	127	Basalt	Big	Interior flake	Distal	N/A	30-35	35-40	Utilized flake, wear both laterals, 30°-straight/ convex, 40°- irregular polishing distal end?
1	110-120	134	Chert	Medium	Interior flake	Distal	N/A	45	55	Multi purpose utilized lateral edges, dorsal retouch, (45°) - primarily convex; other - irregular
2	9	158	Chert	Medium	Angular debris	N/A	N/A	65-70		Scraper/ spokeshave? concave-convex edge
2	9	158	Quarzite	Big	Rock	N/A	N/A	75		Utilized tabular rock, apparent lateral retouch, edge convex
2	9	119	Jemez obsidian	Medium	Decortication flake	Complete	Cortical	not measured <50		Sourced, edge straight, dorsal face lateral, retouch

Appendix F.3
(continued)

NON-FORMAL TOOLS

Unit	Level	FS #	Material	Size	Debitage Type	Portion	Platform	Edge Angle	Edge Angle	Comments
Trench 5										
2	6	215	Rhyolite	Big	Decortication flake	Distal	N/A	35		Utilized lateral edge, slightly convex, dorsal scarring
2	12	256	Chert	Small	Biface thinning flake	Medial	N/A	20		Utilized straight edge lateral and retouch on one face
Trench 7										
1	1-3	605	Quartzite/ textured rhyolite	Big	Decortication flake or biface thinning flake	Complete	Single facet	distal 20	laterals 20-35	Utilized flake, wear lateral edges and concave distal end, laterals concave/convex and convex
Trench 8										
1	6	739	Chert	Medium	Interior flake	Medial	N/A	50-60		Utilized lateral edge
2	1	705	Quartzite	Big	Interior flake	Medial	N/A	50-65		Utilized lateral edge, slightly concave-convex, retouch?
2	2	716	Limestone	Very big	Decortication flake	Proximal	Single facet	40-45		Utilized lateral edge
2	2	716	Rhyolite	Big	Interior flake	Proximal	Single facet	70-75		Spokeshave?, concave lateral edge

Appendix F.3
(continued)

NON-FORMAL TOOLS

Unit	Level	FS #	Material	Size	Debitage Type	Portion	Platform	Edge Angle	Edge Angle	Comments
2	2	716	Quartzite	Big	Angular debris	N/A	N/A	80		Scraper? egde-slightly convex end, possible retouch, grounding opposite end
2	6	766	Grants obsidian	Medium	Interior flake	Complete	Cortical with facets	lateral <35	proximal 50-60	Multi-purpose tool, retouch convex proximal, wear and retouch convex lateral
2	6	766	Rhyolite	Medium	Rock	N/A	N/A	55-90		Utilized rock, retouch? edge concave to straight
2	7	768	Rhyolite	Big	Interior flake	Complete	Single facet	40-50		Utilized distal edge, slightly convex, dorsal lateral retouch
2	7	771	Grants obsidian	Medium	Interior or biface thinning flake	Distal	N/A	20-30		Utilized proximal edge, retouch both faces, slightly convex, edge formed from outre passe break
2	8	775	Quartzite	Very big	Rock	N/A	N/A	30-40		Utilized tabular rock retouch and/or wear scars both faces and one lateral edge convex and straight

Appendix F.3
(continued)

NON-FORMAL TOOLS

Unit	Level	FS #	Material	Size	Debitage Type	Portion	Platform	Edge Angle	Edge Angle	Comments
2	9	786	Chert/ quartzite	Big	Decortication flake	Distal	N/A	distal 45-50	laterals/ proximal 35-40	Utilized flake, proximal edge straight, distal and one lateral, convex, other concave convex
2	9	786	Grants obsidian	Small	Biface fragment	N/A	N/A	N/A		Edge fragment
2	9	786	Chert	Big	Interior/ biface thinning flake	Proximal	Single facet	35		Utilized lateral edge, concave. possible wear other convex lateral
Trench 8a										
1	4	1009	Sandstone/ quartzitic?	Medium	Angular debris	N/A	N/A	65-70		Utilized flake, retouch one edge, one face edge straight
2	6 south	1044	Chert	Big	Decortication flake	Lateral/ proximal	Cortical	45-50		Spokeshave? lateral near distal step, slightly concave convex
2	4&5	1041	Quartzite	Big	Rock	N/A	N/A	50-55		Utilized rock, lateral retouch one fairly straight edge and both faces, opposite edge battered
Trench 9										
2	3	318	Quartzite	Big	Decortication flake	Medial/ lateral	N/A	65		Utilized edge, straight, apparent retouch and/or wear

Appendix F.3
(continued)

NON-FORMAL TOOLS

Unit	Level	FS #	Material	Size	Debitage Type	Portion	Platform	Edge Angle	Edge Angle	Comments
2	4	325	Chert	Big	Interior flake	Proximal/ lateral	Single facet	35		Utilized lateral slightly convex
2	5	337	Rhyolite	Big	Decortication flake	Lateral/ proximal	Cortical	80-85		Scraper, distal end edge slightly convex, edge 4-5 mm thick
3	4	333	Rhyolite/ chert	Very big	Decortication flake	Proximal	Single facet	N/A		Flake core? two ventral lateral flake scars
3	5	342	Grants obsidian	Small	Interior flake	Medial/ dorsal	N/A	distal 50-70	lateral 45-50	Multi purpose tool, distal straight to slightly convex, lateral straight, both retouch and/or wear
3	6	354	Rhyolite	Big	Decortication flake	Lateral	Cortical	65-70		Utilized edge, distal end, most wear cortical edge
3	6	354	Chert	Big	Interior/ biface thinning flake	Medial/ lateral	N/A	20-35	90	Multi purposed tool, some facial and lateral retouch, edges irregular
3	6	354	Chert?	Big	Decortication flake	Medial/ lateral	N/A	65-70		Coarse retouch (3 scars) one lateral cortex distal

Appendix F.3
(continued)

NON-FORMAL TOOLS

Unit	Level	FS #	Material	Size	Debitage Type	Portion	Platform	Edge Angle	Edge Angle	Comments
3	7	379	Other igneous	Very big	Decortication flake	Distal?		90		Uniface, polishing both faces (use?), six flakes detached distal and remaining lateral, no definite visible edge wear, distal convex, lateral concave
3	9	392	Rhyolite	Big	Angular debris	N/A	N/A	35-45		Utilized edge? rough fairly straight
3	10	397	Chert/ quartzitic sandstone	Big	Interior flake	Complete	Single facet	distal 65	laterals 35-45	Multi purpose, distal end and portions both laterals scarred, laterals concave and straight, distal straight
Trench 10										
1	2	807	Petrified wood	Small	Angular debris	N/A	N/A	65-70		Scraper fragment, retouch one edge, one face, edge fairly straight, wedge shape
1	2	807	Grants obsidian	Small	Cortical biface fragment	Medial	N/A	30		Wear possible one edge with fine retouch, two fairly straight portions, 130° angle

Appendix F.3
(continued)

NON-FORMAL TOOLS

Unit	Level	FS #	Material	Size	Debitage Type	Portion	Platform	Edge Angle	Edge Angle	Comments
1	5	816	Grants obsidian	Medium	Biface fragment	N/A	N/A	20		Utilized biface fragment, probably hinge during thinning, wear primarily straight edge
1	6	819	Grants obsidian	Medium	Biface fragment	N/A	N/A	straight 45-70	curved 40-50	Multi-purpose biface fragment, end scraper fragment, straight edge wear opposite convex edge
2	1	823	Rhyolite	Big	Decortication flake	Proximal	Cortical	55-80, mostly 65		Scraper? lateral edge, rough with couple large scars (3-5 mm), fairly straight
2	1	823	Chert	Medium	Decortication flake	Complete	Cortical	distal 60-65	lateral 35-40	Multi purpose, continuous edge scarring distal and one lateral, lateral fairly straight, distal irregular
2	1	283	Grants obsidian	Small	Biface fragment	N/A	N/A			Corner shaped biface fragment, orientation unknown, edges slightly convex and concave
2	3	832	Grants obsidian	Medium	Decortication flake	Complete	Cortical	25-35		Utilized edge, outre passe, term with wear along one lateral, edge-straight

Appendix F.3
(continued)

NON-FORMAL TOOLS

Unit	Level	FS #	Material	Size	Debitage Type	Portion	Platform	Edge Angle	Edge Angle	Comments
2	4	836	Rhyolite	Very big	Decortication flake	Distal/ medial	N/A	60-75		Utilized flake, retouch, one straight lateral, ventral scaring, dorsal retouch
2	6	845	Rhyolite	Big	Angular debris	N/A	N/A	65-70		Utilized edge wear, probably distal end, concave, convex-concave, wear primarily convex portion
2	6	845	Grants obsidian	Medium	Decortication flake	Complete	Cortical	-20		Graver? possible wear both sides of and on distal protrusion
2	6	845	Grants obsidian	Medium	Angular debris	N/A	N/A	65-70		Utilized portion of convex edge
2	6	845	Obsidian	Small	Angular debris	N/A	N/A	55		Graver? drill? rounded protrusion, heavy stepping, scarring & crushing
2	8	856	Grants obsidian	Medium	Decortication flake	distal	N/A	lateral retouch 65	distal lateral 35-45	Multi purpose tool retouch along 65° lateral; wear distal end and lateral
2	10	861	Rhyolite	Very big	Decortication flake	Complete	Cortical	20-25		Utilized edge straight portion of distal end
Trench 11										
2	1	414	Rhyolite	Big	Decortication flake	Proximal/ lateral	Cortical	35-40		Utilized edge straight lateral

Appendix F.3
(continued)

NON-FORMAL TOOLS

Unit	Level	FS #	Material	Size	Debitage Type	Portion	Platform	Edge Angle	Edge Angle	Comments
2	3	421	Grants obsidian	Small	Decortication flake	Proximal	Cortical	35-40		Utilized flake wear two fairly straight laterals
Trench 14										
	2	1508	Other obsidian	Small	Biface thinning flake	Distal/ lateral	N/A	50		Utilized lateral or distal edge slightly concave to straight

Appendix F.4

Cores and Nodules

CORES AND NODULES

Tr	Unit	Level	FS	Material	Weight (grams)	Size (cm)	Shape	Scars with Platform	Platform Position	Platform Type	% Cortex	Comments
2	1	13	1168	ryolite	188.6	6.8 x 6 x 35	rectangular	2	adjacent	cortical and single facet	25	Tabular core
7	2	10	683	Grants Ridge	2.3	1.7 x 2.2 x .5	disk to oval	1	cobble edge	crushed	20-25	Tested pebble, probably bipolar, other scars show impact, non-water cortex
8	2	11	793	Grants Ridge	4.1	2.4 x 1.8 x .6	disk to oval	1	cobble edge	cortical	50	Tested pebbel, non-water worn cortex
8	2	7	770	ryolite	91	6 x 5.8 x 78	trapizoidal	1	cobble face	cortical	35-40	Tested, tabular nodule striking platform at awkward angle with poorly formed flake that refits
9	3	6	354	other igneous (basalt-andesite?)	165.5	7.3 x 7.1 x 2.4	wedge	2?	parallel	1 cortical; 1 single facet	35-40	Core, wear-cortical edge, two concave areas- two straight overall 2/3 somewhat straight 75-85° angle
10	2	10	861	white chalcedony	7.7	2.5 x 2.3 x 14	square	4	adjacent and parallel	single facet with one psuedo-dihedral	0	Core, completely spent heat treated
10	1	5	816	ryolite	66.1	7.9 x 4.8 x 2.0	triangular	1	cortical	cortical	45	Tested nodule, tabular

Appendix F.4
(continued)

CORES AND NODULES

Tr	Unit	Level	FS	Material	Weight (grams)	Size (cm)	Shape	Scars with Platform	Platform Position	Platform Type	% Cortex	Comments
10	1	3	811	rhyolite	13.1	4.2 x 2.3 x 1.5	trapezium	2-3	parallel	single facet	5	Core scars just over 1 cm long
10	2	4	836	rhyolite	25.3	3.7 x 3.1 x 2	trapezoidal	2	adjacent	single facet	0	Spent core
10	2	4	836	Grants ridge	13.1	3.2 x 2.7 x .8	split oval pebble	4	adjacent	cortical	50-55	Pebble core, non-water worn cortex
10	2	1	823	rhyolite	55.5	6.4 x 4.5 x 2.5	loaf shaped	4-6	parallel and adjacent	cortical and single facet	25	Core-slightly convex cortical edge possibly utilized several hinge scars, 3-10 mm in length
11	2		417	rhyolite	16.6	3 x 2.8 x 1.6	trapezoidal	2-3	pseudo-dihedral	cortical? single facet	10	Core tabular, only one well shaped scar

HAMMERSTONES

Tr.	Unit	Level	FS#	Material	Weight (grams)	Size (cm)	Shape	Battered Location	Flake Scarring	% Cortex	Comments
2	1	11	1157	rhyolite	213	7 x 5 x 4.4	oval	edge and facial	yes, numerous	10-12	Highly battered-also core? small flake scars probably from battering-cortical and single facet platforms?
7	2	6a	618	basalt	554.5	8.5 x 7.5 x 9	trapezoidal to oval	yes, flake scarring		80	Cobble with rounded edges

Appendix F.4
(continued)

CORES AND NODULES

Tr	Unit	Level	FS	Material	Weight (grams)	Size (cm)	Shape	Scars with Platform	Platform Position	Platform Type	% Cortex	Comments
8a	1	8	1021	rhyolitic welded tuff	60.2	4.3 x 4.1 x 3.4	oval	facial		yes?	20	
10	2	3	833	shistos	120	6.4 x 4.3 x 3.8		facial and rounded edges			75	Cobble fragment

Appendix F.5

Lithics Second Sort Raw Data

APPENDIX F.5
LITHICS SECOND SORT DATA

TRENCH	UNIT	LEVEL	FS	MATERIAL	SIZE	TYPE	PORTION	PLATFORM
01	03	001	0936	0	2	000	000	0
01	03	001	0936	0	2	001	001	2
01	03	001	0936	0	2	001	002	1
01	03	001	0936	0	2	001	002	1
01	03	001	0936	0	1	002	001	2
01	03	001	0936	0	4	002	004	0
01	03	001	0936	0	3	002	004	0
01	03	001	0936	0	3	002	004	0
01	03	001	0936	1	2	003	003	0
01	03	001	0936	0	4	005	005	0
01	03	002	0940	0	3	001	001	2
01	02	002	0926	0	2	001	002	2
01	02	002	0926	0	3	002	003	0
01	03	002	0940	2	4	005	3/5	0
01	03	002	0940	2	3	2/3	002	3
01	01	003	0929	0	3	001	002	4
01	01	003	0909	0	3	002	001	2
01	01	003	0909	0	2	002	004	0
01	01	003	0929	0	3	002	004	0
01	01	004	0912	0	2	001	001	2
01	01	004	0912	0	1	001	005	2
01	01	004	0912	0	2	002	003	0
01	01	004	0931	5	4	002	4/5	3
01	01	004	0912	0	2	005	003	0
01	02	005	0932	0	4	001	001	1
01	02	005	0932	0	4	001	003	0
01	02	005	0932	0	3	001	2/5	1
01	02	006	0940	5	3	000	000	0
01	02	006	0934	0	3	001	001	1
01	01	02A	0906	0	2	001	004	0
01	01	02A	0906	0	2	001	005	2
01	01	02A	0906	0	3	001	005	1
01	01	02A	0906	0	3	002	001	2
01	01	02A	0906	0	2	002	002	2

LITHICS SECOND SORT DATA (continued)

TRENCH	UNIT	LEVEL	FS	MATERIAL	SIZE	TYPE	PORTION	PLATFORM
02	01	003	1111	0	3	002	001	2
02	01	003	1111	0	3	002	002	2
02	01	004	1114	0	3	000	000	0
02	01	005	1119	0	4	000	000	0
02	01	005	1119	5	3	000	000	0
02	01	005	1119	0	2	002	002	2
02	01	005	1119	0	3	002	002	2
02	01	005	1119	2	3	005	004	0
02	01	005	1122	0	3	000	000	0
02	01	005	1122	0	2	002	002	2
02	01	005	1122	0	3	002	005	2
02	01	005	1122	0	3	003	002	2
02	01	006	1132	0	2	000	000	0
02	01	006	1132	0	2	000	000	0
02	01	006	1132	0	2	001	001	1
02	01	006	1132	0	3	001	001	2
02	01	006	1132	0	2	001	001	2
02	01	006	1132	0	1	001	001	2
02	01	006	1132	0	3	001	003	0
02	01	006	1132	0	3	001	004	0
02	01	006	1132	2	2	001	004	0
02	01	006	1132	5	3	001	004	0
02	01	006	1132	2	3	002	001	2
02	01	006	1132	0	2	002	001	2
02	01	006	1132	2	2	002	002	2
02	01	006	1132	0	2	002	002	2
02	01	006	1132	0	2	002	002	2
02	01	006	1132	0	2	002	003	0
02	01	006	1132	0	4	005	004	0
02	01	006	1132	2	4	002	003	0
02	01	006	1132	4	3	002	002	2
02	01	007	1139	0	2	000	000	0
02	01	007	1139	0	2	001	001	1
02	01	007	1139	5	4	001	002	2
02	01	007	1139	0	3	002	001	2
02	01	007	1139	0	2	002	001	2
02	01	007	1139	0	3	002	001	2
02	01	007	1139	0	4	002	001	2
02	01	007	1139	2	3	002	001	2
02	01	007	1139	4	3	002	001	2
02	01	007	1139	0	3	002	002	2
02	01	007	1139	5	4	002	004	0
02	01	007	1139	0	3	002	002	2
02	01	007	1139	2	4	003	001	2
02	01	007	1139	0	3	005	004	0
02	01	007	1139	0	3	005	004	0
02	01	007	1139	5	4	001	001	1
02	01	007	1139	0	4	002	003	2
02	01	008	1144	0	4	000	000	0
02	01	008	1144	0	3	000	000	0

LITHICS SECOND SORT DATA (continued)

TRENCH	UNIT	LEVEL	FS	MATERIAL	SIZE	TYPE	PORTION	PLATFORM
02	01	008	1144	0	4	000	000	0
02	01	008	1144	7	3	001	002	1
02	01	008	1144	0	2	001	004	0
02	01	008	1144	0	2	001	005	2
02	01	008	1144	0	3	001	004	0
02	01	008	1144	0	3	002	001	2
02	01	008	1144	4	3	002	001	2
02	01	008	1144	0	2	002	002	2
02	01	008	1144	0	2	002	002	3
02	01	008	1144	1	3	002	002	2
02	01	008	1144	2	3	002	003	0
02	01	008	1144	7	3	002	004	0
02	01	008	1144	0	2	002	004	0
02	01	008	1144	0	3	002	004	0
02	01	008	1144	0	3	002	005	2
02	01	008	1144	0	3	002	004	2
02	01	008	1144	2	4	003	005	2
02	01	008	1144	0	2	005	004	0
02	01	008	1144	0	2	005	004	0
02	01	008	1144	0	2	005	004	0
02	01	008	1144	0	2	001	001	1
02	01	008	1144	1	4	001	001	1
02	01	008	1144	7	4	002	002	1
02	01	008	1144	5	4	003	005	3
02	01	009	1148	0	2	000	000	0
02	01	009	1148	0	2	000	000	0
02	01	009	1148	0	4	001	001	1
02	01	009	1148	0	1	001	001	2
02	01	009	1148	0	2	002	001	2
02	01	009	1148	0	3	002	001	2
02	01	009	1148	1	2	002	001	2
02	01	009	1148	0	3	002	002	2
02	01	009	1148	0	3	002	005	3
02	01	009	1148	0	3	002	002	2
02	01	009	1148	0	4	002	004	0
02	01	009	1148	2	2	005	003	0
02	01	010	1153	0	2	000	000	0
02	01	010	1153	0	3	000	000	0
02	01	010	1153	0	3	000	000	0
02	01	010	1153	0	2	001	001	1
02	01	010	1153	0	2	001	002	2
02	01	010	1153	0	2	001	004	0
02	01	010	1153	0	2	002	001	2
02	01	010	1153	0	3	002	001	2
02	01	010	1153	0	3	002	002	2
02	01	010	1153	0	3	002	004	0
02	01	010	1153	0	2	003	001	2
02	01	010	1153	0	3	005	004	0
02	01	010	1153	0	3	005	004	0
02	01	010	1153	2	4	002	004	0

LITHICS SECOND SORT DATA (continued)

TRENCH	UNIT	LEVEL	FS	MATERIAL	SIZE	TYPE	PORTION	PLATFORM
02	01	011	1156	4	3	000	000	0
02	01	011	1156	1	3	000	000	0
02	01	011	1156	6	2	000	000	0
02	01	011	1156	0	3	000	000	0
02	01	011	1156	0	2	000	000	0
02	01	011	1156	0	3	001	001	4
02	01	011	1156	0	2	001	001	1
02	01	011	1156	0	2	001	001	2
02	01	011	1156	0	2	001	001	1
02	01	011	1156	0	2	001	002	2
02	01	011	1156	0	3	001	002	3
02	01	011	1156	0	4	001	005	1
02	01	011	1156	0	4	001	005	2
02	01	011	1156	1	3	001	004	0
02	01	011	1156	0	3	002	001	2
02	01	011	1156	0	1	002	001	2
02	01	011	1156	0	3	002	002	2
02	01	011	1156	0	2	002	002	2
02	01	011	1156	0	3	002	002	2
02	01	011	1156	0	3	002	002	2
02	01	011	1156	1	2	002	002	2
02	01	011	1156	0	3	002	002	2
02	01	011	1156	0	4	002	003	0
02	01	011	1156	0	2	002	004	0
02	01	011	1156	5	4	002	004	0
02	01	011	1156	0	3	002	004	0
02	01	011	1156	0	2	002	004	0
02	01	011	1156	0	2	002	005	2
02	01	011	1156	0	3	002	005	2
02	01	011	1156	0	2	002	005	2
02	01	011	1156	7	3	002	005	3
02	01	011	1156	5	4	005	004	0
02	01	011	1156	7	4	003	001	1
02	01	011	1156	0	4	002	003	0
02	01	012	1162	2	4	000	000	0
02	01	012	1162	6	4	000	000	0
02	01	012	1162	0	3	000	000	0
02	01	012	1162	0	2	002	001	2
02	01	012	1162	0	4	002	001	2
02	01	012	1162	0	3	002	001	2
02	01	012	1162	0	4	002	002	2
02	01	012	1162	0	3	002	002	2
02	01	012	1162	0	4	002	004	0
02	01	012	1162	0	4	002	004	0
02	01	012	1162	2	4	002	005	2
02	01	012	1162	1	3	002	005	2
02	01	012	1162	2	4	003	002	2
02	01	012	1162	0	4	003	004	0
02	01	012	1162	0	2	005	004	0
02	01	012	1162	7	4	002	003	0

LITHICS SECOND SORT DATA (continued)

TRENCH	UNIT	LEVEL	FS	MATERIAL	SIZE	TYPE	PORTION	PLATFORM
02	01	012	1162	2	4	002	004	0
02	01	012	1162	7	3	003	004	0
02	01	012	1162	7	4	003	004	0
02	01	013	1168	0	2	001	001	5
02	01	013	1168	0	3	001	001	1
02	01	013	1168	0	4	002	001	2
02	01	013	1168	0	2	002	001	2
02	01	013	1168	0	3	002	001	2
02	01	013	1168	0	4	002	002	2
02	01	013	1168	0	4	002	004	0
02	01	013	1168	0	3	002	004	0
02	01	013	1168	1	4	003	004	0
02	01	013	1168	0	4	002	002	5
02	02	03A	1180	0	3	000	000	0
02	02	03A	1180	0	3	001	001	1
02	02	03A	1180	4	3	001	001	1
02	02	03A	1180	0	2	001	001	1
02	02	03A	1180	0	4	001	002	2
02	02	03A	1180	0	3	001	002	2
02	02	03A	1180	0	2	001	003	0
02	02	03A	1180	0	2	002	001	2
02	02	03A	1180	0	2	002	001	2
02	02	03A	1180	0	4	002	001	2
02	02	03A	1180	0	2	002	004	0
02	02	03A	1180	2	4	002	005	2
02	02	03A	1180	6	4	003	003	0
02	02	03A	1180	0	3	005	004	0
02	02	03A	1180	0	4	002	001	2
02	03	003	1104	0	2	002	001	2
02	03	003	1104	0	3	002	003	0
02	03	003	1104	0	3	002	005	2
02	03	004	1106	2	3	000	000	0
02	03	004	1106	2	4	000	000	0
02	03	004	1106	0	3	001	001	1
02	03	004	1106	0	2	002	001	2
02	03	004	1106	0	3	002	003	0
02	03	004	1106	3	4	005	004	0
02	03	005	1116	4	2	000	000	0
02	03	005	1116	0	3	002	002	2
02	03	005	1116	0	4	002	003	0
02	03	006	1125	0	3	000	000	0
02	03	006	1125	0	3	000	000	0
02	03	006	1125	0	4	002	001	2
02	03	006	1125	2	3	002	001	2
02	03	006	1125	0	3	002	003	0
02	03	006	1125	0	4	005	004	0
02	03	007	1128	1	3	001	004	0
02	03	007	1128	0	3	002	002	2
02	03	008	1135	0	2	002	001	2
02	03	008	1135	0	2	002	001	2
02	03	008	1135	0	1	002	002	2

LITHICS SECOND SORT DATA (continued)

TRENCH	UNIT	LEVEL	FS	MATERIAL	SIZE	TYPE	PORTION	PLATFORM
03	02	008	0037	0	3	000	000	0
03	02	008	0037	0	3	000	000	0
03	02	008	0037	0	4	001	001	1
03	02	008	0037	0	4	001	005	2
03	02	008	0037	0	2	001	005	1
03	02	008	0037	0	4	002	001	2
03	02	008	0037	0	2	002	002	2
03	02	008	0037	0	2	002	004	0
03	02	009	0044	0	3	000	000	0
03	02	009	0044	0	4	000	000	0
03	02	009	0044	0	2	001	003	0
03	02	009	0044	0	3	002	001	2
03	02	009	0044	0	4	002	003	0
03	02	009	0044	0	3	002	004	0
03	02	009	0044	0	4	002	004	0
03	02	009	0044	0	4	002	4/5	0
03	02	009	0044	5	4	003	001	2
03	02	009	0044	1	4	003	002	3/5
03	02	009	0044	1	3	003	001	3
03	02	009	0044	5	4	2/3	001	2
03	02	010	0052	1	3	000	000	0
03	02	010	0052	0	3	002	001	2
03	02	010	0052	0	3	002	001	2
03	02	010	0052	2	3	002	002	2
03	02	010	0052	0	3	002	005	2
03	02	010	0052	0	3	002	2/5	2
03	02	010	0052	1	3	002	4/5	0
03	02	010	0052	0	3	002	4/5	0
03	02	010	0052	1	3	2/3	4/5	0
03	02	011	0073	0	2	001	001	2
03	02	011	0073	0	4	001	4/5	1
03	02	011	0073	0	2	002	002	2
03	02	012	0076	0	2	002	001	2
03	02	012	0076	0	2	002	001	2
03	02	012	0076	0	4	002	004	0
03	02	06A	0028	0	3	002	4/5	0
03	02	06A	0028	1	3	003	002	2
03	02	07A	0031	0	3	002	001	2
03	02	07A	0031	0	2	002	002	3

LITHICS SECOND SORT DATA (continued)

TRENCH	UNIT	LEVEL	FS	MATERIAL	SIZE	TYPE	PORTION	PLATFORM
04	02	4-5	0112	0	3	000	000	0
04	02	4-5	0112	0	2	001	002	1
04	02	5-6	0116	0	4	001	001	0
04	02	5-6	0116	0	3	002	004	2
04	02	5-6	0116	1	4	003	2/5	3
04	02	6-7	0119	5	4	000	000	0
04	02	6-7	0119	5	4	001	004	0
04	02	6-7	0119	0	2	002	001	2
04	02	6-7	0119	0	2	002	001	2
04	02	6-7	0119	0	3	002	002	2
04	02	6-7	0119	0	4	002	005	2
04	02	6-7	0119	0	4	3/2	004	0
04	02	008	0154	0	3	000	000	0
04	02	008	0154	0	2	002	002	2
04	02	008	0154	6	4	003	004	0
04	02	009	0158	0	4	000	000	0
04	02	009	0158	1	3	000	000	0
04	02	009	0158	1	4	002	4/2	0

LITHICS SECOND SORT DATA (continued)

TRENCH	UNIT	LEVEL	FS	MATERIAL	SIZE	TYPE	PORTION	PLATFORM
05	02	011	0238	2	4	000	000	0
05	02	011	0238	0	2	000	000	0
05	02	011	0238	0	2	001	004	0
05	02	011	0238	0	4	002	002	2
05	02	011	0238	0	2	002	003	0
05	02	011	0238	0	3	002	004	0
05	02	011	0238	0	4	002	004	0
05	02	011	0238	1	2	002	004	0
05	02	011	0238	0	3	002	005	2
05	02	011	0238	0	3	002	005	0
05	02	011	0238	0	3	002	4/5	0
05	02	011	0238	0	4	003	001	2
05	02	011	0238	0	3	005	004	0
05	02	011	0238	1	3	2/3	002	2
05	02	012	0257	0	4	000	000	0
05	02	012	0257	1	4	002	005	2
05	02	012	0257	0	4	2/3	004	0
05	02	012	0258	0	3	000	000	0
05	02	012	0258	2	4	000	000	0

LITHICS SECOND SORT DATA (continued)

TRENCH	UNIT	LEVEL	FS	MATERIAL	SIZE	TYPE	PORTION	PLATFORM
06	02	008	0522	0	3	000	000	0
06	02	008	0522	0	4	002	2/5	2
06	02	010	0526	0	4	000	000	0
06	02	010	0526	0	3	002	001	2
06	02	010	0526	0	4	003	002	5
06	02	011	0536	0	2	002	005	2
06	02	012	0546	0	3	002	002	2
06	02	013	0551	1	3	001	001	2
06	02	013	0551	0	2	002	002	2
06	02	014	0564	1	3	000	000	0
06	02	014	0564	7	3	001	001	1
06	02	014	0564	0	3	002	002	2

LITHICS SECOND SORT DATA (continued)

TRENCH	UNIT	LEVEL	FS	MATERIAL	SIZE	TYPE	PORTION	PLATFORM
07	02	006	0627	0	2	001	001	2
07	02	007	0634	0	4	002	001	2
07	02	007	0634	2	3	002	001	5
07	02	007	0640	1	3	002	004	0
07	02	007	0640	1	3	003	001	2
07	02	008	0650	0	4	000	000	0
07	02	008	0650	0	4	000	000	0
07	02	008	0650	0	4	000	000	0
07	02	008	0650	0	2	001	001	1
07	02	008	0650	0	2	001	001	1
07	02	008	0650	0	2	001	001	1
07	02	008	0650	0	2	001	001	2
07	02	008	0650	0	3	001	002	1
07	02	008	0650	0	2	001	003	0
07	02	008	0650	2	3	001	004	0
07	02	008	0650	5	4	001	005	1
07	02	008	0650	0	4	001	004	0
07	02	008	0650	2	4	002	001	1
07	02	008	0650	0	3	002	001	2
07	02	008	0650	0	3	002	002	2
07	02	008	0650	0	2	002	002	5
07	02	008	0650	0	2	002	004	0
07	02	008	0650	0	2	002	004	0
07	02	008	0650	0	2	002	004	0
07	02	008	0650	0	3	002	004	0
07	02	008	0650	0	2	002	004	0
07	02	008	0650	0	3	002	002	3
07	02	008	0650	0	1	005	003	0
07	02	008	0650	0	4	002	002	2
07	02	008	0650	0	4	002	002	2
07	02	009	0662	0	4	000	000	0
07	02	009	0662	0	3	000	000	0
07	02	009	0662	0	2	000	000	0
07	02	009	0662	0	3	000	000	0
07	02	009	0662	0	1	001	001	1
07	02	009	0662	4	4	001	001	1
07	02	009	0662	0	4	001	002	1
07	02	009	0662	0	2	001	004	0
07	02	009	0662	0	2	002	001	2
07	02	009	0662	0	3	002	001	2
07	02	009	0662	0	3	002	001	2
07	02	009	0662	0	2	002	001	2
07	02	009	0662	0	1	002	001	3
07	02	009	0662	0	3	002	002	5
07	02	009	0662	0	2	002	002	2
07	02	009	0662	0	4	002	003	0
07	02	009	0662	0	2	002	003	0
07	02	009	0662	0	3	002	004	0
07	02	009	0662	0	2	002	004	0
07	02	009	0662	0	2	002	005	2

LITHICS SECOND SORT DATA (continued)

TRENCH	UNIT	LEVEL	FS	MATERIAL	SIZE	TYPE	PORTION	PLATFORM
07	02	009	0662	2	3	003	001	5
07	02	009	0662	0	4	002	001	2
07	02	009	0665	0	4	000	000	0
07	02	009	0665	0	4	000	000	0
07	02	009	0665	0	3	000	000	0
07	02	009	0665	0	2	002	002	2
07	02	009	0665	0	2	002	002	2
07	02	009	0665	0	4	002	002	2
07	02	009	0665	0	4	002	005	2
07	02	010	0674	0	1	000	000	0
07	02	010	0674	0	4	000	000	0
07	02	010	0674	0	2	002	001	2
07	02	010	0674	0	2	002	005	0
07	02	010	0674	0	3	002	002	2
07	02	07A	0646	0	2	001	005	2
07	02	07A	0646	0	3	002	001	2
07	02	07A	0646	0	4	002	003	0

LITHICS SECOND SORT DATA (continued)

TRENCH	UNIT	LEVEL	FS	MATERIAL	SIZE	TYPE	PORTION	PLATFORM
08	01	005	0733	0	3	000	000	0
08	01	005	0733	1	4	000	000	0
08	01	005	0733	1	4	001	001	5
08	01	005	0733	0	3	001	001	1
08	01	005	0733	0	3	001	004	0
08	01	005	0733	0	2	001	005	1
08	01	005	0733	0	1	002	001	2
08	01	005	0733	0	3	002	002	2
08	01	005	0733	0	2	002	004	0
08	01	005	0733	0	2	002	004	0
08	01	005	0733	0	3	002	005	2
08	01	005	0733	0	4	002	003	0
08	01	005	0733	6	4	003	003	0
08	01	005	0733	8	3	003	001	1
08	01	006	0739	0	2	000	000	0
08	01	006	0739	1	4	000	000	0
08	01	006	0739	0	4	000	000	0
08	01	006	0739	0	4	000	000	0
08	01	006	0739	4	3	000	000	0
08	01	006	0739	0	1	001	001	1
08	01	006	0739	2	2	001	003	0
08	01	006	0739	0	4	001	004	0
08	01	006	0739	0	3	001	005	1
08	01	006	0739	1	3	002	003	0
08	01	006	0739	4	4	002	004	0
08	01	006	0739	0	2	002	005	2
08	01	006	0739	0	4	002	005	0
08	01	006	0739	7	4	003	001	2
08	01	006	0739	0	3	003	001	2
08	01	007	0742	0	3	002	001	2
08	01	007	0742	0	4	002	001	2
08	01	007	0742	0	4	002	002	3
08	01	007	0742	0	3	002	005	2
08	01	007	0742	0	3	002	005	2
08	01	007	0742	0	4	002	002	5
08	01	008	0749	4	3	000	000	0
08	01	008	0749	0	2	000	000	0
08	01	008	0749	0	3	001	004	0
08	01	008	0749	4	3	002	001	5
08	01	008	0749	0	1	002	004	0
08	01	008	0749	0	2	002	004	0
08	01	009	0752	0	2	001	005	1
08	01	009	0752	0	2	002	001	2
08	01	009	0752	0	2	002	005	2
08	01	010	0755	0	4	001	004	0
08	01	5-6	0746	1	4	001	005	2
08	01	5-6	0746	0	3	002	001	2
08	01	5-6	0746	0	4	002	005	2
08	01	5-6	0746	0	2	002	005	2
08	02	006	0766	0	2	000	000	0

LITHICS SECOND SORT DATA (continued)

TRENCH	UNIT	LEVEL	FS	MATERIAL	SIZE	TYPE	PORTION	PLATFORM
08	02	006	0766	0	3	001	004	0
08	02	006	0766	5	3	002	001	4
08	02	006	0766	0	3	002	004	0
08	02	006	0766	0	3	006	000	0
08	02	007	0768	0	3	000	000	0
08	02	007	0768	0	1	001	001	1
08	02	007	0768	4	3	001	001	1
08	02	007	0768	0	2	001	002	2
08	02	007	0768	0	2	001	005	1
08	02	007	0768	0	2	002	001	2
08	02	007	0768	0	3	002	001	3
08	02	007	0768	0	2	002	002	2
08	02	007	0768	0	4	002	003	0
08	02	007	0768	0	3	002	004	0
08	02	007	0768	0	4	002	005	2
08	02	007	0768	0	4	002	004	0
08	02	007	0770	0	2	001	001	1
08	02	008	0773	6	3	000	000	0
08	02	008	0773	0	2	001	002	1
08	02	008	0773	0	4	001	003	0
08	02	008	0773	0	2	002	001	2
08	02	008	0773	0	2	002	002	2
08	02	008	0773	0	2	002	002	2
08	02	008	0773	5	4	003	001	2
08	02	008	0775	2	1	006	000	0
08	02	009	0786	5	4	bifac	000	0
08	02	009	0786	0	3	000	000	0
08	02	009	0786	0	4	000	000	0
08	02	009	0786	0	3	001	002	2
08	02	009	0786	5	4	001	004	0
08	02	009	0786	0	2	001	005	2
08	02	009	0786	0	3	001	002	2
08	02	009	0786	0	3	001	002	1
08	02	009	0786	0	1	002	001	4
08	02	009	0786	0	3	002	001	2
08	02	009	0786	0	2	002	001	2
08	02	009	0786	0	3	002	002	2
08	02	009	0786	1	3	002	002	2
08	02	009	0786	0	2	002	003	0
08	02	009	0786	0	2	002	004	0
08	02	009	0786	0	3	002	004	0
08	02	009	0786	1	3	002	005	3
08	02	009	0786	0	2	002	005	2
08	02	009	0786	1	4	003	004	0
08	02	009	0786	1	2	002	002	2
08	02	010	0789	0	3	001	001	1
08	02	010	0789	0	2	001	003	0
08	02	010	0789	5	4	001	005	1
08	02	010	0789	0	2	002	001	2
08	02	010	0789	0	2	002	001	2

LITHICS SECOND SORT DATA (continued)

TRENCH	UNIT	LEVEL	FS	MATERIAL	SIZE	TYPE	PORTION	PLATFORM
08	02	010	0789	0	2	002	001	2
08	02	010	0789	4	3	002	001	2
08	02	010	0789	0	4	002	001	2
08	02	010	0789	0	4	002	002	2
08	02	011	0793	0	4	001	004	0
08	02	011	0793	0	2	002	001	2
08	02	011	0793	0	4	002	004	0
08	02	011	0793	0	2	002	004	0
08	02	011	0793	5	4	003	001	3
08	02	012	0797	6	4	001	002	2
08	02	012	0797	0	3	001	004	0
08	02	012	0797	0	3	001	004	0
08	02	012	0797	0	4	001	004	0
08	02	012	0797	5	3	002	002	2
08	02	012	0797	0	2	002	004	0
08	02	012	0797	0	2	002	005	2
08	02	012	0797	0	4	002	001	3
08	02	012	0797	0	4	003	001	5
08	02	013	0800	0	4	000	000	0
08	02	013	0800	2	2	001	002	2
08	02	013	0800	0	2	001	004	0
08	02	013	0800	2	3	002	001	2
08	02	013	0800	0	3	002	004	0
08	02	013	0800	0	3	002	004	0
08	02	013	0800	1	4	003	002	2
08	02	014	2703	0	3	002	003	0

LITHICS SECOND SORT DATA (continued)

TRENCH	UNIT	LEVEL	FS	MATERIAL	SIZE	TYPE	PORTION	PLATFORM
8A	02	4-5	1041	0	3	001	001	1
8A	02	4-5	1041	5	3	001	002	1
8A	02	4-5	1041	0	4	001	002	1
8A	02	4-5	1041	0	2	001	002	1
8A	02	4-5	1041	0	3	001	005	2
8A	02	4-5	1041	0	2	001	005	2
8A	02	006	1044	0	4	000	000	0
8A	02	006	1044	0	2	001	004	0
8A	02	006	1044	1	2	001	005	1
8A	02	007	1048	1	3	000	000	0
8A	02	007	1048	0	3	001	001	1
8A	02	007	1048	4	3	002	004	0

LITHICS SECOND SORT DATA (continued)

TRENCH	UNIT	LEVEL	FS	MATERIAL	SIZE	TYPE	PORTION	PLATFORM
09	02	004	0325	0	3	000	000	0
09	02	004	0325	5	4	000	000	0
09	02	004	0325	4	2	001	001	1
09	02	004	0325	0	3	001	002	1
09	02	004	0325	1	2	002	002	2
09	02	004	0325	0	2	002	005	2
09	02	004	0325	4	2	002	005	5
09	02	004	0325	8	4	003	001	2
09	02	005	0337	1	4	000	000	0
09	02	005	0337	0	2	000	000	0
09	02	005	0337	0	1	000	000	0
09	02	005	0337	0	2	000	000	0
09	02	005	0337	1	2	000	000	0
09	02	005	0337	0	2	001	001	2
09	02	005	0337	0	3	001	001	1
09	02	005	0337	2	3	001	001	1
09	02	005	0337	0	2	001	001	1
09	02	005	0337	0	1	001	001	1
09	02	005	0337	0	1	001	002	1
09	02	005	0337	0	2	001	004	0
09	02	005	0337	0	2	001	004	0
09	02	005	0337	0	2	001	005	1
09	02	005	0337	0	2	001	005	1
09	02	005	0337	0	3	002	001	2
09	02	005	0337	4	1	002	005	2
09	02	005	0337	1	4	002	004	0
09	02	005	0337	2	4	002	004	0
09	02	006	0346	2	3	001	002	2
09	02	006	0346	0	2	001	004	0
09	02	006	0346	6	4	001	004	0
09	02	006	0346	0	2	002	004	0
09	02	007	0358	0	2	000	000	0
09	02	007	0358	0	2	001	002	1
09	02	007	0358	0	3	001	003	0
09	02	007	0358	0	2	002	001	2
09	02	007	0358	0	2	002	002	2
09	03	005	0342	0	4	000	000	0
09	03	005	0342	0	4	000	000	0
09	03	005	0342	0	3	001	002	1
09	03	005	0342	0	3	001	002	1
09	03	005	0342	0	2	001	005	1
09	03	005	0342	2	3	001	005	1
09	03	005	0342	0	2	002	001	2
09	03	005	0342	0	2	002	004	0
09	03	005	0342	4	4	002	004	0
09	03	005	0342	2	4	002	004	0
09	03	005	0342	1	3	003	003	0
09	03	005	0342	1	4	003	001	2
09	03	005	0371	4	3	001	001	1
09	03	006	0354	1	3	000	000	0

LITHICS SECOND SORT DATA (continued)

TRENCH	UNIT	LEVEL	FS	MATERIAL	SIZE	TYPE	PORTION	PLATFORM
09	03	006	0354	5	4	000	000	0
09	03	006	0354	0	3	000	000	0
09	03	006	0354	0	2	000	000	0
09	03	006	0354	0	1	001	001	2
09	03	006	0354	0	4	001	001	1
09	03	006	0354	0	4	001	005	2
09	03	006	0354	0	2	001	005	1
09	03	006	0354	0	3	001	005	2
09	03	006	0354	0	2	002	001	2
09	03	006	0354	4	2	001	001	1
09	03	006	0354	2	2	002	002	2
09	03	006	0354	1	3	002	004	0
09	03	006	0354	0	2	002	004	0
09	03	006	0354	0	4	002	005	2
09	03	006	0354	5	3	002	003	0
09	03	006	0354	0	4	002	004	0
09	03	006	0354	1	4	002	004	0
09	03	006	0374	4	2	001	001	2
09	03	006	0374	0	2	001	004	0
09	03	006	0374	0	2	002	004	0
09	03	006	0374	0	3	002	005	2
09	03	007	0379	0	2	000	000	0
09	03	007	0379	0	3	001	001	1
09	03	007	0379	7	3	001	001	4
09	03	007	0379	0	2	001	003	0
09	03	007	0379	0	4	001	005	2
09	03	007	0379	0	3	002	002	2
09	03	008	0387	8	4	000	000	0
09	03	008	0387	2	3	001	001	2
09	03	008	0387	0	3	001	002	1
09	03	008	0387	0	2	001	002	1
09	03	008	0387	0	4	001	004	0
09	03	008	0387	0	4	001	004	0
09	03	008	0387	0	2	001	005	1
09	03	008	0387	0	3	002	001	2
09	03	008	0387	0	3	002	001	2
09	03	008	0387	0	3	002	002	2
09	03	008	0387	0	4	002	004	0
09	03	008	0387	0	3	002	004	0
09	03	008	0387	2	4	002	005	2
09	03	008	0387	0	2	002	004	0
09	03	008	0387	8	4	003	003	0
09	03	009	0392	0	2	000	000	0
09	03	009	0392	1	3	000	000	0
09	03	009	0392	2	4	000	000	0
09	03	009	0392	0	2	000	000	0
09	03	009	0392	0	4	001	001	2
09	03	009	0392	0	2	001	001	2
09	03	009	0392	0	3	001	002	1
09	03	009	0392	0	4	001	002	1

LITHICS SECOND SORT DATA (continued)

TRENCH	UNIT	LEVEL	FS	MATERIAL	SIZE	TYPE	PORTION	PLATFORM
09	03	009	0392	0	1	001	005	1
09	03	009	0392	0	3	001	005	1
09	03	009	0392	2	4	001	004	0
09	03	009	0392	0	4	002	002	2
09	03	009	0392	0	1	002	002	2
09	03	009	0392	4	4	002	005	2
09	03	009	0392	1	4	002	002	2
09	03	010	0397	0	4	000	000	0
09	03	010	0397	0	4	000	000	0
09	03	010	0397	6	4	000	000	0
09	03	010	0397	1/2	2	001	001	1
09	03	010	0397	0	3	001	004	0
09	03	010	0397	1	2	002	001	2
09	03	010	0397	2	3	002	001	2
09	03	010	0397	1	3	002	001	2
09	03	010	0397	1	4	002	001	2
09	03	010	0397	1	3	002	002	3
09	03	8-9	0389	0	1	001	001	1

LITHICS SECOND SORT DATA (continued)

TRENCH	UNIT	LEVEL	FS	MATERIAL	SIZE	TYPE	PORTION	PLATFORM
10	01	005	0816	0	2	000	000	0
10	01	005	0816	0	3	001	001	1
10	01	005	0816	0	4	001	004	0
10	01	005	0816	6	4	001	005	1
10	01	005	0816	0	2	001	005	1
10	01	005	0816	0	3	001	005	4
10	01	005	0816	0	3	002	001	2
10	01	005	0816	0	2	002	001	2
10	01	005	0816	0	2	002	001	2
10	01	005	0816	1	3	002	002	2
10	01	005	0816	0	4	002	002	2
10	01	005	0816	0	2	002	005	2
10	01	005	0816	0	2	002	005	2
10	01	005	0816	0	4	002	005	2
10	01	005	0816	5	4	003	001	2
10	01	006	0819	0	3	000	000	0
10	01	006	0819	0	2	000	000	0
10	01	006	0819	0	2	001	001	2
10	01	006	0819	0	4	001	001	1
10	01	006	0819	0	2	001	001	1
10	01	006	0819	0	3	001	002	1
10	01	006	0819	0	3	001	004	0
10	01	006	0819	0	3	001	005	1
10	01	006	0819	0	3	001	005	2
10	01	006	0819	1	3	001	005	1
10	01	006	0819	1	3	002	001	3
10	01	006	0819	0	4	002	001	3
10	01	006	0819	2	3	002	001	2
10	01	006	0819	0	3	002	001	2
10	01	006	0819	0	2	002	001	2
10	01	006	0819	0	3	002	002	2
10	01	006	0819	0	2	002	002	2
10	01	006	0819	0	4	002	003	0
10	01	006	0819	0	3	002	004	0
10	01	006	0819	6	3	002	005	3
10	01	006	0819	0	4	002	005	2
10	01	006	0819	0	2	002	005	2
10	01	006	0819	0	3	002	004	0
10	01	006	0819	5	4	003	005	1
10	01	006	0819	0	3	003	001	1
10	02	007	0851	0	2	000	000	0
10	02	007	0851	0	3	001	001	1
10	02	007	0851	4	3	001	001	1
10	02	007	0851	0	3	001	001	1
10	02	007	0851	4	2	001	005	2
10	02	007	0851	0	4	001	005	1
10	02	007	0851	0	4	002	001	2
10	02	007	0851	0	1	002	001	2
10	02	007	0851	0	4	002	001	2
10	02	007	0851	0	3	002	001	2

LITHICS SECOND SORT DATA (continued)

TRENCH	UNIT	LEVEL	FS	MATERIAL	SIZE	TYPE	PORTION	PLATFORM
10	02	007	0851	2	4	002	001	5
10	02	007	0851	2	3	002	002	2
10	02	007	0851	0	4	002	003	0
10	02	007	0851	3	3	002	004	0
10	02	007	0851	2	4	002	005	2
10	02	007	0851	0	2	002	001	2
10	02	008	0856	0	3	000	000	0
10	02	008	0856	2	4	001	001	1
10	02	008	0856	0	2	001	001	2
10	02	008	0856	0	3	001	001	2
10	02	008	0856	4	3	001	004	0
10	02	008	0856	5	3	001	004	0
10	02	008	0856	0	2	001	005	2
10	02	008	0856	0	3	002	001	2
10	02	008	0856	0	3	002	001	2
10	02	008	0856	2	3	002	001	2
10	02	008	0856	0	2	002	001	2
10	02	008	0856	0	3	002	005	2
10	02	009	0859	0	2	000	000	0
10	02	009	0859	0	3	001	001	1
10	02	009	0859	1	2	001	001	2
10	02	009	0859	0	3	001	001	1
10	02	009	0859	0	3	001	002	1
10	02	009	0859	1	4	001	004	0
10	02	009	0859	0	3	002	002	2
10	02	009	0859	0	3	002	004	0
10	02	010	0861	0	2	000	000	0
10	02	010	0861	0	3	000	000	0
10	02	010	0861	0	2	001	001	1
10	02	010	0861	0	2	001	001	2
10	02	010	0861	0	4	001	001	2
10	02	010	0861	0	2	001	001	1
10	02	010	0861	0	1	001	001	4
10	02	010	0861	2	2	001	004	0
10	02	010	0861	7	4	001	004	0
10	02	010	0861	1	2	001	005	1
10	02	010	0861	2	2	002	001	2
10	02	010	0861	0	2	002	001	2
10	02	010	0861	4	3	002	002	2
10	02	010	0861	0	2	002	002	2
10	02	010	0861	0	3	002	004	0
10	02	010	0861	0	3	002	005	2
10	02	010	0861	0	4	002	004	0
10	02	010	0861	1	3	003	002	2
10	02	010	0861	5	3	003	004	0
10	02	010	0861	5	4	001	002	4

LITHICS SECOND SORT DATA (continued)

TRENCH	UNIT	LEVEL	FS	MATERIAL	SIZE	TYPE	PORTION	PLATFORM
11	01	004	0405	0	2	001	001	2
11	01	004	0405	0	2	000	000	0
11	02	001	0414	0	2	001	002	1
11	02	001	0414	0	2	001	5/4	0
11	02	003	0421	5	4	001	002	1
11	02	004	0424	0	2	001	001	1
11	02	004	0424	0	2	001	002	1
11	02	004	0424	0	2	002	001	2
11	02	005	0426	0	2	001	001	1
11	02	005	0426	0	2	001	004	0
11	02	005	0426	2	1	001	005	1
11	02	005	0426	0	2	001	005	1
11	02	005	0426	1	4	2/3	004	0
11	02	006	0431	0	3	001	001	2
11	02	006	0431	5	4	003	002	1
11	02	007	0433	0	3	002	001	2
11	02	009	0436	0	2	002	002	2
13	00	5-6	1506	0	3	001	002	1
14	00	002	1508	7	4	001	4/5	0
14	00	003	1510	0	1	001	005	1
14	00	003	1510	0	3	002	005	2
14	00	004	1512	0	2	005	003	0
14	00	005	1516	1	3	002	001	2
16	00	002	1523	0	2	001	001	2
16	00	003	1524	0	2	001	001	1
17	00	002	1521	1	4	002	3/5	0
18	00	002	1528	7	4	bifac		
18	00	003	1530	0	2	002	001	2
18	00	004	1534	2	2	005	003	0
18	00	005	1536	1	2	000	000	0
18	00	005	1536	4	2	001	005	2
18	00	006	1538	7	4	003	004	0

APPENDIX G

CERAMICS DATA

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
01	002	001A	0901	91	06	1	3	0	0	0	0	0	0
01	1-2	001A	0923	91	06	1	1	1	10	0	0	0	1
01	1-2	001A	0923	91	06	2	3	0	0	0	0	0	0
01	1-2	001A	0923	91	06	2	3	0	0	0	0	0	0
01	1-2	001A	0923	91	07	1	3	0	0	0	0	0	1
01	1-2	001A	0923	91	07	2	3	0	0	0	0	0	0
01	000	0000	0935	92	01	1	3	0	0	1	0	0	0
01	003	0001	0935	92	01	1	1	1	24	1	0	0	0
01	001	002A	0905	92	01	2	3	0	0	0	0	0	0
01	000	0000	0935	92	01	2	3	0	0	1	0	0	0
01	003	0001	0935	92	05	1	3	0	0	0	0	0	0
01	003	0001	0935	92	05	1	3	0	0	0	0	0	0
01	003	0001	0935	92	05	2	3	0	0	0	0	0	0
01	001	002A	0905	92	06	1	3	0	0	0	0	0	1
01	001	002A	0905	92	06	2	3	0	0	0	0	0	0
01	001	002A	0905	92	06	2	3	0	0	0	0	0	0
01	001	002A	0905	92	06	2	3	0	0	0	0	0	0
01	003	0001	0935	92	06	2	3	0	0	0	0	0	0
01	002	0002	0925	92	06	2	3	0	0	0	0	0	0
01	003	0001	0935	92	06	2	1	3	22	0	0	0	0
01	003	0001	0935	92	06	2	1	7	0	0	0	0	0
01	003	0001	0935	92	07	2	3	0	0	0	0	0	0
01	002	0002	0925	92	11	2	1	1	26	0	0	0	0
01	000	0000	0935	92	23	2	2	0	0	1	0	0	0
01	003	0001	0935	92	30	2	3	0	0	0	0	0	0
01	003	0001	0935	92	30	2	3	0	0	0	0	0	0
01	003	0001	0935	92	30	2	3	0	0	0	0	0	0
01	003	0002	0939	93	01	1	3	0	0	1	0	0	0
01	001	0004	0911	93	01	1	1	1	16	1	0	0	0
01	001	0003	0908	93	05	2	3	0	0	0	0	0	0
01	001	0004	0911	93	05	2	3	0	0	0	0	0	0
01	001	0004	0911	93	06	1	3	0	0	0	0	0	0
01	001	0004	0911	93	06	2	3	0	0	0	0	0	0
01	003	0002	0939	93	06	2	3	0	0	0	0	0	0
01	001	0004	0930	93	06	2	3	0	0	0	0	0	0
01	001	0003	0928	93	06	2	3	0	0	0	0	0	0
01	001	0003	0928	93	06	2	3	0	0	0	0	0	0
01	003	0002	0939	93	06	2	3	0	0	0	0	0	0
01	003	0002	0939	93	06	2	3	0	0	0	0	0	0
01	001	0004	0911	93	06	2	3	0	0	0	0	0	0
01	001	0003	0908	93	06	2	3	0	0	0	0	0	0
01	003	0002	0939	93	06	2	3	0	0	0	0	0	0
01	001	0003	0908	93	06	2	3	0	0	0	0	0	0
01	001	0004	0930	93	06	2	1	1	10	0	0	0	0
01	001	0060	0917	94	06	1	3	0	0	0	0	0	1
01			0917	94	46	1	1	1	28	4	5	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
02	2-2	01-A	1174	111	06	1	3	0	0	0	0	0	1
02	2-2	01-A	1174	111	06	1	0	0	0	0	0	0	1
02	2-2	01-A	1174	111	06	1	3	0	0	0	0	0	1
02	2-2	01-A	1174	111	06	2	3	0	0	0	0	0	0
02	2-2	01-A	1174	111	07	2	4	0	0	0	0	0	0
02	001	0002	1107	111	08	2	3	0	0	0	0	0	0
02	2-2	01-A	1174	111	08	2	3	0	0	0	0	0	0
02	2-2	01-A	1174	111	08	2	3	0	0	0	0	0	0
02	002	002A	1176	112	01	1	3	0	0	1	0	0	0
02	003	0006	1124	112	01	2	3	0	0	1	0	0	0
02	001	0004	1113	112	06	1	3	0	0	0	0	0	0
02	003	0005	1115	112	06	1	3	0	0	0	0	0	1
02	001	0004	1113	112	06	1	1	1	12	0	0	0	0
02	003	0004	1105	112	06	2	3	0	0	0	0	0	0
02	003	0005	1115	112	06	2	3	0	0	0	0	0	0
02	003	0004	1105	112	06	2	3	0	0	0	0	0	0
02	003	0004	1105	112	06	2	3	0	0	0	0	0	0
02	002	002A	1176	112	06	2	3	0	0	0	0	0	0
02	003	0006	1124	112	06	2	2	1	0	0	0	0	0
02	003	0004	1105	112	06	2	1	1	14	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
02	001	0004	1113	112	07	2	3	0	0	0	0	0	0
02	003	0005	1115	112	07	2	1	3	20	0	0	0	0
02	001	0005	1178	112	13	1	3	0	0	3	5	0	0
02	001	0000	1138	113	01	1	3	0	0	1	0	0	0
02	001	0000	1138	113	01	1	3	0	0	1	0	0	0
02	001	0000	1138	113	01	1	3	0	0	1	0	0	0
02	001	0005	1121	113	01	1	3	0	0	1	0	0	0
02	001	0000	1131	113	01	1	1	1	14	1	0	0	0
02	001	0000	1138	113	01	1	1	1	22	1	0	0	0
02	001	0000	1131	113	01	2	3	0	0	1	0	0	0
02	001	0000	1131	113	01	2	3	0	0	1	0	0	0
02	001	0000	1138	113	02	1	3	0	0	0	0	0	0
02	001	0000	1131	113	02	2	3	0	0	0	0	0	0
02	001	0000	1131	113	05	0	3	0	0	0	0	0	0
02	001	0005	1118	113	05	2	3	0	0	0	0	0	0
02	001	0005	1121	113	06	1	3	0	0	0	0	0	0
02	001	0005	1118	113	06	1	3	0	0	0	0	0	1
02	001	0007	1138	113	06	2	3	0	0	0	0	0	0
02	001	0007	1138	113	06	2	3	0	0	0	0	0	0
02	001	0007	1138	113	06	2	2	0	0	0	0	0	0
02	001	0006	1131	113	06	2	3	0	0	0	0	0	0
02	001	0007	1138	113	06	2	3	0	0	0	0	0	0
02	001	0007	1138	113	06	2	3	0	0	0	0	0	0
02	001	0006	1131	113	06	2	3	0	0	0	0	0	0
02	001	0006	1131	113	06	2	3	0	0	0	0	0	0
02	001	0007	1138	113	06	2	2	0	0	0	0	0	0
02	001	0007	1138	113	06	2	3	0	0	0	0	0	0
02	001	0005	1121	113	06	2	3	0	0	0	0	0	0
02	001	0007	1138	113	06	2	2	0	0	0	0	0	0
02	001	0007	1138	113	06	2	3	0	0	0	0	0	0
02	001	0006	1131	113	06	2	3	0	0	0	0	0	0
02	001	0007	1138	113	06	2	3	0	0	0	0	0	0
02	001	0006	1131	113	06	2	2	0	0	0	0	0	0
02	001	0007	1138	113	06	2	3	0	0	0	0	0	0
02	001	0007	1138	113	06	2	2	0	0	0	0	0	0
02	001	0007	1138	113	06	2	2	0	0	0	0	0	0
02	001	0007	1138	113	06	2	3	0	0	0	0	0	0
02	001	0000	1138	113	06	2	3	0	0	0	0	0	0
02	001	0006	1131	113	06	2	3	0	0	0	0	0	0
02	001	0006	1131	113	06	2	3	0	0	0	0	0	0
02	001	0005	1118	113	06	2	3	0	0	0	0	0	0
02	001	0006	1131	113	06	2	3	0	0	0	0	0	0
02	001	0007	1138	113	06	2	3	0	0	0	0	0	1
02	001	0006	1131	113	06	2	3	0	0	0	0	0	1
02	001	0006	1131	113	06	2	3	0	0	0	0	0	1
02	001	0006	1131	113	06	2	3	0	0	0	0	0	1
02	001	0007	1138	113	06	2	3	0	0	0	0	0	1
02	001	0006	1131	113	06	2	3	0	0	0	0	0	1
02	001	0006	1131	113	06	2	3	0	0	0	0	0	1
02	001	0006	1131	113	06	2	3	0	0	0	0	0	1
02	001	0006	1131	113	06	2	3	0	0	0	0	0	1
02	001	0007	1138	113	06	2	2	0	0	0	0	0	1
02	001	0006	1131	113	06	2	1	3	0	0	0	0	0
02	001	0000	1138	113	06	2	1	3	16	0	0	0	0
02	001	0006	1131	113	06	2	1	7	22	0	0	0	0
02	001	0006	1131	113	06	2	1	7	26	0	0	0	1
02	001	0005	1118	113	07	1	3	0	0	0	0	0	0
02	001	0000	1138	113	07	1	0	0	0	0	0	0	1
02	001	0000	1138	113	07	1	0	0	0	0	0	0	1
02	001	0006	1131	113	07	2	3	0	0	0	0	0	0
02	001	0000	1131	113	07	2	3	0	0	0	0	0	0
02	001	0000	1138	113	07	2	3	0	0	0	0	0	0
02	001	0000	1131	113	07	2	3	0	0	0	0	0	0
02	001	0007	1138	113	07	2	3	0	0	0	0	0	0
02	001	0005	1118	113	07	2	3	0	0	0	0	0	0
02	001	0005	1121	113	07	2	3	0	0	0	0	0	1
02	001	0000	1131	113	07	2	3	0	0	0	0	0	2
02	001	0000	1138	113	07	2	1	1	18	0	0	0	0
02	001	0005	1118	113	08	2	3	0	0	0	0	0	0
02	001	0000	1138	113	09	1	0	0	0	0	0	0	0
02	001	0006	1131	113	09	2	2	0	0	0	0	0	0
02	001	0006	1131	113	11	0	1	2	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
02	001	0000	1138	113	19	1	3	0	0	3	0	0	0
02	001	0000	1131	113	21	1	3	0	0	3	0	0	0
02			1138	113	21	1	1	1	26	3	0	0	0
02	001	0005	1118	113	21	2	3	0	0	3	0	0	0
02	001	0000	1138	113	21	2	3	0	0	3	0	0	0
02			1138	113	21	2	3	0	0	3	0	0	0
02	001	0005	1121	113	40	2	3	0	0	3	0	0	0
02	001	0009	1147	114	05	1	3	0	0	0	0	0	0
02	001	0009	1147	114	05	2	3	0	0	0	0	0	0
02	001	0008	1145	114	06	0	1	1	0	0	0	0	0
02	001	0000	1145	114	06	1	3	0	0	0	0	0	0
02	001	0009	1147	114	06	1	3	0	0	0	0	0	1
02	001	0000	1147	114	06	1	3	0	0	0	0	0	1
02	001	0009	1147	114	06	2	3	0	0	0	0	0	0
02	001	0008	1145	114	06	2	3	0	0	0	0	0	0
02	001	0009	1147	114	06	2	3	0	0	0	0	0	0
02	001	0009	1147	114	06	2	3	0	0	0	0	0	0
02	001	0008	1145	114	06	2	3	0	0	0	0	0	0
02	001	0008	1145	114	06	2	3	0	0	0	0	0	0
02	001	0008	1145	114	06	2	3	0	0	0	0	0	0
02	001	0009	1147	114	06	2	3	0	0	0	0	0	0
02	001	0008	1145	114	06	2	3	0	0	0	0	0	0
02	001	0009	1147	114	06	2	3	0	0	0	0	0	0
02	001	0009	1147	114	06	2	3	0	0	0	0	0	0
02	001	0008	1145	114	06	2	3	0	0	0	0	0	0
02	001	0009	1147	114	06	2	3	0	0	0	0	0	0
02	001	0009	1147	114	06	2	3	0	0	0	0	0	0
02	001	0008	1145	114	06	2	3	0	0	0	0	0	0
02	001	0000	1147	114	06	2	3	0	0	0	0	0	0
02	001	0008	1145	114	06	2	3	0	0	0	0	0	0
02	001	0009	1147	114	06	2	3	0	0	0	0	0	0
02	001	0008	1145	114	06	2	3	0	0	0	0	0	0
02	001	0009	1147	114	06	2	3	0	0	0	0	0	0
02	001	0008	1145	114	06	2	3	0	0	0	0	0	0
02	001	0009	1147	114	06	2	3	0	0	0	0	0	0
02	001	0005	1145	114	06	2	3	0	0	0	0	0	0
02	001	0009	1147	114	06	2	3	0	0	0	0	0	0
02	001	0008	1145	114	06	2	3	0	0	0	0	0	0
02	001	0009	1147	114	06	2	3	0	0	0	0	0	0
02	001	0008	1145	114	06	2	3	0	0	0	0	0	0
02	001	0009	1147	114	06	2	3	0	0	0	0	0	0
02	001	0008	1145	114	06	2	3	0	0	0	0	0	0
02	001	0008	1145	114	06	2	3	0	0	0	0	0	0
02	001	0008	1145	114	06	2	3	0	0	0	0	0	0
02	001	0008	1145	114	06	2	3	0	0	0	0	0	0
02	001	0009	1147	114	06	2	3	0	0	0	0	0	0
02	001	0008	1145	114	06	2	3	0	0	0	0	0	0
02	001	0008	1145	114	06	2	3	0	0	0	0	0	1
02	001	0008	1145	114	06	2	3	0	0	0	0	0	1
02	001	0008	1145	114	06	2	3	0	0	0	0	0	1
02	001	0008	1145	114	06	2	3	0	0	0	0	0	1
02	001	0008	1145	114	06	2	3	0	0	0	0	0	1
02	001	0008	1145	114	06	2	3	0	0	0	0	0	1
02	001	0009	1147	114	06	2	3	0	0	0	0	0	1
02	001	0009	1147	114	06	2	4	0	0	0	0	0	1
02	001	0009	1147	114	06	2	3	0	0	0	0	0	1
02	001	0009	1147	114	06	2	2	0	0	0	0	0	1
02	001	0009	1147	114	06	2	3	0	0	0	0	0	1
02	001	0008	1145	114	06	2	1	3	10	0	0	0	0
02	001	0009	1147	114	06	2	1	3	0	0	0	0	0
02	001	0009	1147	114	06	3	0	0	0	0	0	0	0
02	001	0009	1147	114	06	5	5	0	0	0	0	0	0
02	001	0008	1145	114	07	1	1	5	24	0	0	0	1
02	001	0009	1147	114	07	1	1	5	24	0	0	0	1
02	001	0009	1147	114	07	2	3	0	0	0	0	0	0
02	001	0009	1147	114	07	2	2	0	0	0	0	0	0
02	001	0009	1147	114	07	2	3	0	0	0	0	0	0
02	001	0008	1145	114	07	2	3	0	0	0	0	0	0
02	001	0000	1147	114	07	2	3	0	0	0	0	0	0
02	001	0008	1145	114	07	2	3	0	0	0	0	0	0
02	001	0009	1147	114	07	2	3	0	0	0	0	0	0
02	001	0000	1145	114	07	2	3	0	0	0	0	1	1

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
02	001	0009	1147	114	07	2	1	5	0	0	0	0	0
02	001	0000	1147	114	08	2	3	0	0	0	0	0	0
02	001	0009	1147	114	08	2	3	0	0	0	0	0	0
02	001	0000	1147	114	08	2	3	0	0	0	0	0	0
02	001	0009	1147	114	08	2	3	0	0	0	0	0	0
02	001	0008	1145	114	09	2	2	0	0	0	0	0	0
02	001	0009	1147	114	11	2	1	0	16	0	0	0	0
02	001	0009	1147	114	11	2	1	0	0	0	0	0	0
02	001	0009	1147	114	11	2	1	0	0	0	0	0	0
02	001	0009	1147	114	11	2	1	0	0	0	0	0	0
02	001	0009	1147	114	11	2	1	0	0	0	0	0	0
02	001	0000	1145	114	12	1	3	0	0	0	0	0	0
02	001	0000	1145	114	17	2	3	0	0	3	0	0	0
02	001	0000	1147	114	19	1	3	0	0	3	0	0	0
02	001	0000	1145	114	22	2	3	0	0	0	0	0	0
02	001	0008	1145	114	29	2	3	0	0	0	0	0	0
02	001	0009	1147	114	30	1	3	0	0	0	0	0	1
02	001	0009	1147	114	30	2	4	0	0	0	0	0	0
02	001	0009	1147	114	30	2	3	0	0	0	0	0	0
02	001	0009	1147	114	30	2	3	0	0	0	0	0	0
02	001	0009	1147	114	30	2	3	0	0	0	0	0	0
02	001	0008	1145	114	33	2	3	0	0	0	0	0	0
02	001	0009	1147	114	39	0	3	0	0	0	0	0	0
02	001	0000	1147	114	42	2	3	0	0	0	0	0	0
02	000	0000	1179	114	01	1	3	0	0	2	0	0	0
02	000	0000	1179	114	03	2	3	0	0	2	0	0	0
02	000	0000	1179	114	06	2	3	0	0	0	0	0	0
02	000	0000	1179	114	07	2	3	0	0	0	0	0	0
02	000	0000	1179	114	07	2	1	1	28	0	0	0	0
02	000	0000	1179	114	07	2	1	1	28	0	0	0	0
02	000	0000	1179	114	07	2	1	7	22	0	0	0	0
02	000	0000	1179	114	17	2	3	0	0	3	0	0	0
02	000	0000	1179	114	25	1	3	0	0	0	0	0	1
02	000	0000	1154	119	01	1	4	0	0	1	0	0	0
02	000	0000	1154	119	01	1	3	0	0	1	0	0	0
02	000	0000	1151	119	01	1	1	8	22	1	0	0	0
02	001	0010	1151	119	02	2	2	0	0	0	0	0	0
02	001	0011	1154	119	06	0	4	0	0	0	0	0	0
02	001	0011	1154	119	06	0	4	0	0	0	0	0	1
02	001	0010	1151	119	06	1	3	0	0	0	0	0	0
02	001	0010	1151	119	06	1	3	0	0	0	0	0	0
02	001	0011	1154	119	06	1	3	0	0	0	0	0	1
02	001	0011	1154	119	06	1	3	0	0	0	0	0	1
02	001	0011	1154	119	06	1	3	0	0	0	0	0	1
02	001	0010	1151	119	06	1	3	0	0	0	0	0	1
02	001	0011	1154	119	06	1	3	0	0	0	0	0	1
02	001	0011	1154	119	06	1	4	0	0	0	0	0	1
02	001	0010	1151	119	06	1	3	0	0	0	0	0	1
02	001	0010	1151	119	06	1	3	0	0	0	0	0	1
02	001	0011	1154	119	06	1	3	0	0	0	0	0	1
02	001	0010	1151	119	06	1	3	0	0	0	0	0	1
02	001	0010	1151	119	06	1	3	0	0	0	0	0	1
02	001	0011	1154	119	06	1	1	2	0	0	0	0	1
02	001	0010	1151	119	06	1	1	2	24	0	0	0	1
02	001	0010	1151	119	06	2	3	0	0	0	0	0	0
02	001	0010	1151	119	06	2	3	0	0	0	0	0	0
02	001	0010	1151	119	06	2	3	0	0	0	0	0	0
02	001	0010	1151	119	06	2	3	0	0	0	0	0	0
02	001	0010	1151	119	06	2	3	0	0	0	0	0	0
02	001	0010	1151	119	06	2	3	0	0	0	0	0	0
02	001	0011	1154	119	06	2	3	0	0	0	0	0	0
02	001	0010	1151	119	06	2	3	0	0	0	0	0	0
02	001	0011	1154	119	06	2	3	0	0	0	0	0	0
02	001	0011	1154	119	06	2	3	0	0	0	0	0	0
02	001	0011	1154	119	06	2	3	0	0	0	0	0	0
02	001	0011	1154	119	06	2	3	0	0	0	0	0	0
02	000	0000	1154	119	06	2	3	0	0	0	0	0	0
02	001	0010	1151	119	06	2	3	0	0	0	0	0	0
02	001	0011	1154	119	06	2	3	0	0	0	0	0	0
02	001	0011	1154	119	06	2	3	0	0	0	0	0	0
02	001	0011	1154	119	06	2	2	0	0	0	0	0	0
02	001	0011	1154	119	06	2	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
02	001	0011	1154	119	06	2	3	0	0	0	0	0	0
02	001	0011	1154	119	06	2	3	0	0	0	0	0	0
02	001	0011	1154	119	06	2	3	0	0	0	0	0	0
02	001	0011	1154	119	06	2	3	0	0	0	0	0	0
02	001	0011	1154	119	06	2	3	0	0	0	0	0	0
02	001	0010	1151	119	06	2	3	0	0	0	0	0	0
02	001	0011	1154	119	06	2	3	0	0	0	0	0	0
02	000	0000	1151	119	06	2	3	0	0	0	0	0	0
02	001	0010	1151	119	06	2	3	0	0	0	0	0	0
02	001	0010	1151	119	06	2	3	0	0	0	0	0	0
02	001	0011	1154	119	06	2	3	0	0	0	0	0	0
02	000	0000	1154	119	06	2	3	0	0	0	0	0	0
02	001	0010	1151	119	06	2	3	0	0	0	0	0	0
02	001	0010	1151	119	06	2	3	0	0	0	0	0	0
02	001	0011	1154	119	06	2	3	0	0	0	0	0	0
02	001	0011	1154	119	06	2	3	0	0	0	0	0	0
02	001	0011	1154	119	06	2	3	0	0	0	0	0	0
02	001	0011	1154	119	06	2	3	0	0	0	0	0	0
02	001	0010	1151	119	06	2	1	3	18	0	0	0	0
02	001	0011	1154	119	06	2	1	3	18	0	0	0	0
02	001	0011	1154	119	06	2	1	7	16	0	0	0	0
02	000	0000	1154	119	06	3	2	0	0	0	0	0	0
02	000	0000	1154	119	06	3	2	0	0	0	0	0	0
02	000	0000	1154	119	06	3	2	0	0	0	0	0	0
02	001	0011	1154	119	07	0	4	0	0	0	0	0	0
02	000	0000	1154	119	07	1	1	1	24	0	0	0	1
02	001	0011	1154	119	07	1	1	1	22	0	0	0	1
02	001	0010	1151	119	07	1	1	5	24	0	0	0	1
02	001	0011	1154	119	07	1	1	5	24	0	0	0	1
02	001	0011	1154	119	07	2	3	0	0	0	0	0	0
02	001	0010	1151	119	07	2	3	0	0	0	0	0	0
02	001	0011	1154	119	07	2	3	0	0	0	0	0	0
02	001	0011	1154	119	07	2	3	0	0	0	0	0	0
02	001	0011	1154	119	07	2	3	0	0	0	0	0	0
02	001	0011	1154	119	07	2	3	0	0	0	0	0	0
02	000	0000	1154	119	07	2	1	7	26	0	0	0	0
02	001	0011	1154	119	08	0	3	0	0	0	0	0	0
02	001	0011	1154	119	08	0	3	0	0	0	0	0	0
02	000	0000	1154	119	08	1	1	1	20	0	0	0	0
02	000	0000	1154	119	08	1	1	1	20	0	0	0	0
02	001	0011	1154	119	08	1	1	5	28	0	0	0	1
02	001	0010	1151	119	08	1	1	5	26	0	0	0	1
02	000	0000	1151	119	08	2	3	0	0	0	0	0	0
02	001	0011	1154	119	08	2	2	0	0	0	0	0	0
02	001	0010	1151	119	08	2	1	7	22	0	0	0	0
02	000	0000	1154	119	11	2	3	0	0	0	0	0	0
02	000	0000	1154	119	11	2	3	0	0	0	0	0	0
02	001	0011	1154	119	11	2	2	0	0	0	0	0	0
02	000	0000	1154	119	11	2	1	1	14	0	0	0	0
02	000	0000	1154	119	11	2	1	7	20	0	0	0	0
02	000	0000	1154	119	12	1	0	0	0	4	0	0	0
02	000	0000	1151	119	17	1	3	0	0	3	0	0	0
02	001	0011	1154	119	17	2	2	0	0	0	0	0	0
02	000	0000	1154	119	17	2	3	0	0	3	0	0	0
02	001	0010	1151	119	29	2	3	0	0	0	0	0	0
02	001	0010	1151	119	30	2	3	0	0	0	0	0	0
02	000	0000	1151	119	35	2	3	0	0	0	0	0	0
02	001	0011	1154	119	41	2	3	0	0	0	0	0	0
02	001	0011	1154	119	41	2	2	0	0	0	0	0	0
02	001	0011	1154	119	41	2	2	0	0	0	0	0	0
02			1151	119	52	1	3	0	0	3	0	0	0
02	001	0000	1167	115	01	2	2	0	0	1	0	0	0
02	001	0012	1161	115	06	1	3	0	0	0	0	0	1
02	001	0012	1161	115	06	1	3	0	0	0	0	0	1
02	001	0012	1161	115	06	1	3	0	0	0	0	0	1
02	2-1	0014	1171	115	06	1	3	0	0	0	0	0	1
02	001	0013	1167	115	06	1	4	0	0	0	0	0	1
02	001	0012	1161	115	06	1	4	0	0	0	0	0	1
02	000	0000	1161	115	06	1	3	0	0	0	0	0	1
02	001	0013	1167	115	06	1	3	0	0	0	0	0	1
02	001	0013	1167	115	06	1	4	0	0	0	0	0	1
02	001	0012	1161	115	06	1	3	0	0	0	0	0	1

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
02	001	0012	1161	115	06	1	3	0	0	0	0	0	1
02	000	0000	1161	115	06	1	3	0	0	0	0	0	1
02	001	0013	1167	115	06	1	3	0	0	0	0	0	1
02	001	0012	1161	115	06	1	3	0	0	0	0	0	1
02	001	0012	1161	115	06	1	1	1	20	0	0	0	1
02	2-1	0014	1171	115	06	1	1	3	28	0	0	0	1
02	000	0000	1161	115	06	2	3	0	0	0	0	0	0
02	001	0013	1167	115	06	2	3	0	0	0	0	0	0
02	001	0013	1167	115	06	2	2	0	0	0	0	0	0
02	2-1	0014	1171	115	06	2	3	0	0	0	0	0	0
02	001	0013	1167	115	06	2	3	0	0	0	0	0	0
02	001	0013	1167	115	06	2	3	0	0	0	0	0	0
02	001	0013	1167	115	06	2	3	0	0	0	0	0	0
02	2-1	0014	1171	115	06	2	3	0	0	0	0	0	0
02	001	0013	1167	115	06	2	3	0	0	0	0	0	1
02	001	0013	1167	115	06	2	3	0	0	0	0	0	1
02	001	0013	1167	115	06	2	3	0	0	0	0	0	1
02	001	0012	1161	115	06	2	1	3	14	0	0	0	0
02	2-1	0014	1171	115	06	2	1	3	22	0	0	0	0
02	001	0000	1167	115	06	2	1	8	18	0	0	1	0
02	001	0013	1167	115	06	3	0	0	0	0	0	0	0
02	001	0013	1167	115	07	0	3	0	0	0	0	0	0
02	001	0000	1167	115	07	1	0	0	0	0	0	0	1
02	000	0000	1161	115	07	1	1	1	20	0	0	0	0
02	000	0000	1161	115	07	1	1	1	12	0	0	0	1
02	001	0013	1167	115	07	1	1	5	26	0	0	0	1
02	000	0000	1161	115	07	1	1	8	14	0	0	0	1
02	001	0000	1167	115	07	2	0	0	0	0	0	0	0
02	000	0000	1161	115	07	2	3	0	0	0	0	0	0
02	001	0000	1167	115	07	2	3	0	0	0	0	0	0
02	000	0000	1161	115	07	2	3	0	0	0	0	0	0
02	000	0000	1161	115	07	2	3	0	0	0	0	0	1
02	001	0000	1167	115	07	2	1	7	20	0	0	0	0
02	001	0000	1167	115	08	2	0	0	0	0	0	0	0
02	2-1	0014	1171	115	08	2	3	0	0	0	0	0	0
02	001	0012	1161	115	11	2	3	0	0	0	0	0	0
02	000	0000	1161	115	17	2	3	0	0	3	0	0	0
02			1167	115	51	3	3	0	0	0	0	0	0
02	003	0007	1127	116	05	2	3	0	0	0	0	0	0
02	003	0009	1142	116	06	1	3	0	0	0	0	0	1
02	003	0008	1134	116	06	2	3	0	0	0	0	0	0
02	003	0007	1127	116	07	2	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
03	002	0001	0003	1	01	1	3	0	0	0	0	0	0
03	002	0004	0011	1	01	1	3	0	0	1	0	0	0
03	002	0003	0008	1	01	1	3	0	0	1	0	0	0
03	001	0008	0068	1	01	1	3	0	0	1	0	0	0
03	002	0004	0011	1	01	1	3	0	0	1	0	0	0
03	002	0004	0011	1	01	1	3	0	0	1	0	0	0
03	001	0002	0040	1	01	1	3	0	0	1	0	0	0
03	002	0003	0008	1	01	1	3	0	0	1	0	0	0
03	001	0002	0040	1	01	1	3	0	0	1	0	0	0
03	002	0004	0011	1	01	1	3	0	0	1	0	0	0
03	002	0004	0011	1	01	1	1	1	24	1	0	0	0
03	002	0004	0011	1	01	1	1	1	16	1	0	0	0
03	002	0001	0003	1	01	1	1	1	12	1	0	0	0
03	002	0002	0005	1	01	1	1	1	20	1	0	0	0
03	002	0004	0011	1	01	1	1	1	12	1	0	0	0
03	002	0004	0011	1	01	2	3	0	0	1	0	0	0
03	002	0002	0005	1	01	2	3	0	0	1	0	0	0
03	002	0003	0008	1	01	2	3	0	0	1	0	0	0
03	002	0002	0005	1	01	2	3	0	0	1	0	0	0
03	002	0004	0011	1	02	2	3	0	0	0	0	0	0
03	001	0004	0057	1	03	1	3	0	0	7	0	0	0
03	001	0003	0047	1	06	1	3	0	0	0	0	0	0
03	001	0001	0039	1	06	1	3	0	0	0	0	0	0
03	002	0002	0005	1	06	1	3	0	0	0	0	0	1

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
03	002	0003	0008	1	06	1	3	0	0	0	0	0	1
03	002	0003	0008	1	06	2	3	0	0	0	0	0	0
03	001	0004	0057	1	06	2	3	0	0	0	0	0	0
03	001	0001	0039	1	06	2	3	0	0	0	0	0	0
03	001	0004	0057	1	06	2	3	0	0	0	0	0	0
03	001	0004	0057	1	06	2	3	0	0	0	0	0	0
03	001	0003	0047	1	06	2	3	0	0	0	0	0	0
03	001	0004	0057	1	06	2	3	0	0	0	0	0	0
03	001	0002	0040	1	06	2	3	0	0	0	0	0	0
03	001	0003	0047	1	06	2	3	0	0	0	0	0	0
03	002	0004	0011	1	06	2	3	0	0	0	0	0	0
03	002	0004	0011	1	06	2	3	0	0	0	0	0	0
03	002	0001	0003	1	06	2	3	0	0	0	0	0	0
03	002	0001	0003	1	06	2	3	0	0	0	0	0	0
03	001	0001	0039	1	06	2	3	0	0	0	0	0	0
03	002	0002	0005	1	06	2	3	0	0	0	0	0	0
03	002	0004	0011	1	06	2	3	0	0	0	0	0	0
03	002	0003	0008	1	06	2	3	0	0	0	0	0	0
03	002	0004	0011	1	06	2	3	0	0	0	0	0	0
03	002	0004	0011	1	06	2	2	0	0	0	0	0	0
03	002	0003	0008	1	06	2	3	0	0	0	0	0	0
03	001	0002	0040	1	06	2	3	0	0	0	0	0	0
03	002	0003	0008	1	06	2	3	0	0	0	0	0	0
03	002	0004	0011	1	06	2	3	0	0	0	0	0	0
03	002	0003	0008	1	06	2	3	0	0	0	0	0	0
03	002	0004	0011	1	06	2	3	0	0	0	0	0	0
03	002	0003	0008	1	06	2	3	0	0	0	0	0	0
03	002	0004	0011	1	06	2	3	0	0	0	0	0	0
03	002	0003	0008	1	06	2	3	0	0	0	0	0	0
03	002	0004	0011	1	06	2	3	0	0	0	0	0	0
03	002	0003	0008	1	06	2	3	0	0	0	0	0	0
03	001	0003	0047	1	06	2	3	0	0	0	0	0	0
03	001	0004	0057	1	06	2	3	0	0	0	0	0	0
03	002	0004	0011	1	06	2	3	0	0	0	0	0	0
03	002	0003	0008	1	06	2	3	0	0	0	0	0	0
03	002	0004	0011	1	06	2	2	0	0	0	0	0	0
03	002	0003	0008	1	06	2	3	0	0	0	0	0	0
03	002	0003	0008	1	06	2	3	0	0	0	0	0	0
03	002	0003	0008	1	06	2	3	0	0	0	0	0	0
03	002	0003	0008	1	06	2	3	0	0	0	0	0	0
03	002	0003	0008	1	06	2	3	0	0	0	0	0	0
03	002	0003	0008	1	06	2	1	1	22	0	0	0	0
03	002	0003	0008	1	06	2	1	1	24	0	0	0	0
03	002	0003	0008	1	06	2	1	3	26	0	0	0	0
03	002	0004	0011	1	06	2	1	3	26	0	0	0	0
03	002	0003	0008	1	07	2	3	0	0	0	0	0	0
03	002	0003	0008	1	07	2	3	0	0	0	0	0	0
03	002	0004	0011	1	07	2	3	0	0	0	0	0	0
03	002	0004	0011	1	07	2	3	0	0	0	0	0	0
03	001	0004	0057	1	07	2	3	0	0	0	0	0	0
03	002	0003	0008	1	07	2	3	0	0	0	0	0	0
03	001	0004	0057	1	07	2	3	0	0	0	0	0	0
03	002	0003	0008	1	07	2	3	0	0	0	0	0	0
03	001	0004	0057	1	07	2	3	0	0	0	0	0	0
03	002	0003	0008	1	07	2	3	0	0	0	0	0	0
03	001	0004	0057	1	07	2	3	0	0	0	0	0	0
03	002	0000	0001	1	07	2	3	0	0	0	0	0	0
03	001	0003	0047	1	07	2	1	1	22	0	0	0	0
03	001	0004	0057	1	08	2	2	0	0	0	0	0	0
03	002	0007	0023	2	01	1	3	0	0	1	0	0	0
03	001	0005	0060	2	01	1	3	0	0	1	0	0	0
03	002	0006	0019	2	01	1	3	0	0	1	0	0	0
03	002	0005	0014	2	01	1	3	0	0	1	0	0	0
03	002	0005	0014	2	01	1	3	0	0	1	0	0	0
03	002	0006	0019	2	01	1	3	0	0	1	0	0	0
03	002	0005	0014	2	01	1	3	0	0	1	0	0	0
03	002	0005	0014	2	01	1	3	0	0	1	0	0	0
03	002	0007	0023	2	01	1	1	1	12	1	0	0	0
03	002	0005	0014	2	01	1	1	1	12	1	0	0	0
03	002	0005	0014	2	01	1	1	1	10	1	0	0	0
03	002	0006	0019	2	01	1	1	1	18	1	0	0	0
03	002	0005	0014	2	01	2	5	0	0	1	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
03	002	0006	0019	2	01	2	3	0	0	1	0	0	0
03	002	0006	0019	2	03	1	3	0	0	1	5	0	0
03	002	0005	0014	2	05	1	3	0	0	0	0	0	0
03	002	0005	0014	2	05	1	3	0	0	0	0	0	0
03	002	0005	0014	2	05	2	3	0	0	0	0	0	0
03	002	0005	0014	2	05	2	3	0	0	0	0	0	0
03	002	0005	0014	2	05	2	3	0	0	0	0	0	0
03	002	0006	0019	2	06	1	3	0	0	0	0	0	0
03	002	0005	0014	2	06	1	3	0	0	0	0	0	0
03	002	0005	0014	2	06	1	3	0	0	0	0	0	0
03	002	0005	0014	2	06	1	3	0	0	0	0	0	0
03	002	0007	0023	2	06	1	4	0	0	0	0	0	1
03	002	0007	0023	2	06	1	3	0	0	0	0	0	1
03	001	0006	0063	2	06	1	3	0	0	0	0	0	1
03	001	0005	0060	2	06	1	3	0	0	0	0	0	1
03	002	0005	0014	2	06	1	3	0	0	0	0	0	1
03	001	0005	0060	2	06	1	3	0	0	0	0	0	1
03	001	0005	0060	2	06	1	3	0	0	0	0	0	1
03	001	0005	0060	2	06	1	3	0	0	0	0	0	1
03	001	0006	0063	2	06	1	3	0	0	0	0	0	1
03	001	0005	0060	2	06	1	3	0	0	0	0	0	1
03	001	0005	0060	2	06	1	3	0	0	0	0	0	1
03	002	0007	0023	2	06	1	3	0	0	0	0	0	1
03	001	0005	0060	2	06	1	3	0	0	0	0	0	1
03	001	0005	0060	2	06	1	3	0	0	0	0	0	1
03	001	0006	0063	2	06	2	3	0	0	0	0	0	0
03	002	0006	0019	2	06	2	3	0	0	0	0	0	0
03	001	0005	0060	2	06	2	3	0	0	0	0	0	0
03	002	0006	0019	2	06	2	3	0	0	0	0	0	0
03	002	0007	0023	2	06	2	3	0	0	0	0	0	0
03	002	0006	0019	2	06	2	3	0	0	0	0	0	0
03	002	0006	0019	2	06	2	3	0	0	0	0	0	0
03	002	0006	0019	2	06	2	3	0	0	0	0	0	0
03	001	0005	0060	2	06	2	3	0	0	0	0	0	0
03	002	0005	0014	2	06	2	3	0	0	0	0	0	0
03	002	0005	0014	2	06	2	3	0	0	0	0	0	0
03	002	0005	0014	2	06	2	3	0	0	0	0	0	0
03	001	0006	0063	2	06	2	3	0	0	0	0	0	0
03	001	0006	0063	2	06	2	3	0	0	0	0	0	0
03	002	0006	0019	2	06	2	3	0	0	0	0	0	0
03	002	0006	0019	2	06	2	3	0	0	0	0	0	0
03	002	0005	0014	2	06	2	3	0	0	0	0	0	0
03	002	0005	0014	2	06	2	3	0	0	0	0	0	0
03	002	0005	0014	2	06	2	3	0	0	0	0	0	0
03	002	0005	0014	2	06	2	3	0	0	0	0	0	0
03	002	0006	0019	2	06	2	3	0	0	0	0	0	0
03	002	0006	0019	2	06	2	3	0	0	0	0	0	0
03	002	0006	0019	2	06	2	3	0	0	0	0	0	0
03	002	0006	0019	2	06	2	3	0	0	0	0	0	0
03	002	0006	0019	2	06	2	3	0	0	0	0	0	0
03	002	0005	0014	2	06	2	3	0	0	0	0	0	0
03	002	0006	0019	2	06	2	3	0	0	0	0	0	0
03	002	0005	0014	2	06	2	3	0	0	0	0	0	0
03	002	0006	0019	2	06	2	3	0	0	0	0	0	0
03	002	0005	0014	2	06	2	3	0	0	0	0	0	0
03	001	0006	0063	2	06	2	3	0	0	0	0	0	0
03	002	0006	0019	2	06	2	3	0	0	0	0	0	0
03	002	0005	0014	2	06	2	3	0	0	0	0	0	0
03	001	0005	0060	2	06	2	3	0	0	0	0	0	0
03	002	0006	0019	2	06	2	3	0	0	0	0	0	0
03	001	0005	0060	2	06	2	3	0	0	0	0	0	0
03	002	0006	0019	2	06	2	1	3	24	0	0	0	0
03	001	0005	0060	2	07	1	3	0	0	0	0	0	1
03	002	0006	0019	2	07	2	3	0	0	0	0	0	0
03	001	0005	0060	2	07	2	3	0	0	0	0	0	0
03	002	0006	0019	2	07	2	3	0	0	0	0	0	0
03	002	0006	0019	2	07	2	3	0	0	0	0	0	0
03	002	0006	0019	2	07	2	3	0	0	0	0	0	0
03	002	0006	0019	2	07	2	3	0	0	0	0	0	0
03	002	0005	0014	2	07	2	3	0	0	0	0	0	0
03	002	0006	0019	2	07	2	3	0	0	0	0	0	0
03	002	0005	0014	2	07	2	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
03	002	0006	0019	2	07	2	3	0	0	0	0	0	0
03	001	0005	0060	2	08	1	0	0	0	0	0	0	1
03	002	0006	0019	2	08	2	3	0	0	0	0	0	0
03	001	0006	0063	2	11	1	3	0	0	0	0	0	0
03	001	0006	0063	2	12	1	1	1	12	7	0	0	0
03	002	0006	0019	2	23	2	3	0	0	1	0	0	0
03	002	0010	0050	3	01	1	3	0	0	1	0	0	0
03	002	0008	0035	3	01	1	3	0	0	1	0	0	0
03	002	005A	0027	3	01	1	3	0	0	1	0	0	0
03	002	0008	0035	3	01	1	3	0	0	1	0	0	0
03	002	0008	0035	3	01	1	3	0	0	1	0	0	0
03	002	0010	0050	3	01	1	3	0	0	1	0	0	0
03	002	0009	0043	3	01	1	3	0	0	1	0	0	0
03	002	0009	0043	3	01	1	3	0	0	1	0	0	0
03	002	0010	0050	3	01	1	3	0	0	1	0	0	0
03	002	0009	0043	3	01	2	3	0	0	0	0	0	0
03	002	007A	0032	3	01	2	3	0	0	1	0	0	0
03	002	0010	0050	3	01	2	3	0	0	1	0	0	0
03	002	0008	0035	3	05	0	3	0	0	0	0	0	0
03	002	0008	0035	3	05	0	3	0	0	0	0	0	0
03	002	0010	0050	3	05	2	3	0	0	0	0	0	0
03	002	010A	0056	3	06	1	3	0	0	0	0	0	0
03	002	006A	0029	3	06	1	3	0	0	0	0	0	0
03	002	006A	0029	3	06	1	3	0	0	0	0	0	0
03	002	0008	0035	3	06	1	3	0	0	0	0	0	1
03	002	0010	0050	3	06	1	3	0	0	0	0	0	1
03	002	0009	0043	3	06	1	3	0	0	0	0	0	1
03	002	0010	0050	3	06	1	3	0	0	0	0	0	1
03	002	0009	0043	3	06	1	3	0	0	0	0	0	1
03	002	010A	0056	3	06	1	3	0	0	0	0	0	1
03	002	0009	0043	3	06	1	3	0	0	0	0	0	1
03	002	0010	0050	3	06	1	3	0	0	0	0	0	1
03	002	0010	0050	3	06	1	3	0	0	0	0	0	1
03	002	0009	0043	3	06	1	3	0	0	0	0	0	1
03	002	0008	0035	3	06	1	3	0	0	0	0	0	1
03	002	0008	0035	3	06	1	3	0	0	0	0	0	1
03	002	010A	0056	3	06	1	3	0	0	0	0	0	1
03	002	0009	0043	3	06	1	3	0	0	0	0	0	1
03	002	0009	0043	3	06	1	3	0	0	0	0	0	1
03	002	0010	0050	3	06	1	3	0	0	0	0	0	1
03	002	0008	0035	3	06	1	3	0	0	0	0	0	1
03	002	0009	0043	3	06	1	3	0	0	0	0	0	1
03	002	0008	0035	3	06	1	3	0	0	0	0	0	1
03	002	0010	0050	3	06	1	3	0	0	0	0	0	1
03	002	0010	0050	3	06	1	4	0	0	0	0	0	1
03	002	010A	0056	3	06	1	1	1	24	0	0	0	1
03	002	006A	0029	3	06	2	3	0	0	0	0	0	0
03	002	0008	0035	3	06	2	3	0	0	0	0	0	0
03	002	0008	0035	3	06	2	3	0	0	0	0	0	0
03	002	005A	0027	3	06	2	3	0	0	0	0	0	0
03	002	010A	0056	3	06	2	3	0	0	0	0	0	0
03	002	007A	0032	3	06	2	3	0	0	0	0	0	0
03	002	007A	0032	3	06	2	3	0	0	0	0	0	0
03	002	0008	0035	3	06	2	3	0	0	0	0	0	0
03	002	0008	0035	3	06	2	3	0	0	0	0	0	0
03	002	007A	0032	3	06	2	3	0	0	0	0	0	0
03	002	0010	0050	3	06	2	3	0	0	0	0	0	0
03	002	0008	0035	3	06	2	3	0	0	0	0	0	0
03	002	0009	0043	3	06	2	3	0	0	0	0	0	0
03	002	006A	0029	3	06	2	3	0	0	0	0	0	0
03	002	0009	0043	3	06	2	3	0	0	0	0	0	0
03	002	0008	0035	3	06	2	3	0	0	0	0	0	0
03	002	0010	0050	3	06	2	3	0	0	0	0	0	0
03	002	006A	0029	3	06	2	3	0	0	0	0	0	0
03	002	0009	0043	3	06	2	3	0	0	0	0	0	0
03	002	007A	0032	3	06	2	3	0	0	0	0	0	0
03	002	0008	0035	3	06	2	3	0	0	0	0	0	0
03	002	010A	0056	3	06	2	3	0	0	0	0	0	0
03	002	0009	0043	3	06	2	3	0	0	0	0	0	0
03	002	0010	0050	3	06	2	3	0	0	0	0	0	0
03	002	0008	0035	3	06	2	3	0	0	0	0	0	0
03	002	0008	0035	3	06	2	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
03	002	0008	0038	3	06	2	3	0	0	0	0	0	0
03	002	007A	0032	3	06	2	3	0	0	0	0	0	0
03	002	0009	0043	3	06	2	3	0	0	0	0	0	0
03	002	0008	0035	3	06	2	3	0	0	0	0	0	0
03	002	0010	0050	3	06	2	3	0	0	0	0	0	0
03	002	010A	0056	3	06	2	3	0	0	0	0	0	0
03	002	0010	0050	3	06	2	3	0	0	0	0	0	0
03	002	0008	0035	3	06	2	3	0	0	0	0	0	0
03	002	007A	0032	3	06	2	4	0	0	0	0	0	0
03	002	007A	0032	3	06	2	3	0	0	0	0	0	0
03	002	005A	0027	3	06	2	3	0	0	0	0	0	0
03	002	0008	0035	3	06	2	3	0	0	0	0	0	0
03	002	0010	0050	3	06	2	3	0	0	0	0	0	0
03	002	0008	0035	3	06	2	3	0	0	0	0	0	0
03	002	0010	0050	3	06	2	3	0	0	0	0	0	0
03	002	0009	0043	3	06	2	3	0	0	0	0	0	0
03	002	0009	0043	3	06	2	3	0	0	0	0	0	0
03	002	0009	0043	3	06	2	1	1	12	0	0	0	0
03	002	010A	0056	3	07	1	1	1	22	0	0	1	1
03	002	0010	0050	3	07	2	3	0	0	0	0	0	0
03	002	0010	0050	3	07	2	3	0	0	0	0	0	0
03	002	0009	0043	3	07	2	3	0	0	0	0	0	0
03	002	0008	0035	3	07	2	3	0	0	0	0	0	0
03	002	0010	0050	3	07	2	3	0	0	0	0	0	0
03	002	007A	0032	3	08	1	1	1	26	0	0	0	0
03	002	0008	0035	3	08	1	1	1	12	0	0	0	1
03	002	007A	0032	3	08	2	3	0	0	0	0	0	0
03	002	0010	0050	3	08	2	3	0	0	0	0	0	0
03	002	010A	0056	3	08	2	2	0	0	0	0	0	0
03	002	007A	0032	3	08	2	3	0	0	0	0	0	0
03	002	007A	0032	3	08	2	3	0	0	0	0	0	0
03	002	0010	0050	3	09	2	3	0	0	0	0	0	0
03	002	0008	0035	3	11	1	2	0	0	0	0	0	1
03	002	0009	0043	3	11	2	3	0	0	0	0	0	0
03	002	007A	0032	3	12	1	3	0	0	1	0	0	0
03			0035	3	37	1	3	0	0	3	0	0	0
03	002	0011	0071	4	01	1	3	0	0	1	0	0	0
03	002	0011	0071	4	01	1	1	1	18	1	0	0	0
03	002	0011	0071	4	01	2	3	0	0	1	0	0	0
03	002	0012	0075	4	06	1	3	0	0	0	0	0	1
03	002	0012	0075	4	06	1	3	0	0	0	0	0	1
03	002	0012	0075	4	06	1	3	0	0	0	0	0	1
03	002	0011	0071	4	06	1	3	0	0	0	0	0	1
03	002	0012	0075	4	06	1	3	0	0	0	0	0	1
03	002	11	1601	4	06	2	3	0	0	0	0	0	0
03	002	11	1601	4	06	2	3	0	0	0	0	0	0
03	002	11	1601	4	06	2	3	0	0	0	0	0	0
03	002	11	1601	4	06	2	3	0	0	0	0	0	0
03	002	11	1601	4	06	2	3	0	0	0	0	0	0
03	002	11	1601	4	06	2	3	0	0	0	0	0	0
03	002	11	1601	4	06	2	3	0	0	0	0	0	0
03	002	11	1601	4	06	2	3	0	0	0	0	0	0
03	002	11	1601	4	06	2	3	0	0	0	0	0	0
03	002	11	1601	4	06	2	3	0	0	0	0	0	0
03	002	11	1601	4	06	2	3	0	0	0	0	0	0
03	002	11	1601	4	06	2	3	0	0	0	0	0	0
03	002	0011	0071	4	06	2	3	0	0	0	0	0	0
03	002	0011	0071	4	06	2	3	0	0	0	0	0	0
03	002	0011	0071	4	06	2	3	0	0	0	0	0	0
03	002	0011	0071	4	06	2	3	0	0	0	0	0	0
03	002	0011	0071	4	06	2	3	0	0	0	0	0	0
03	002	0011	0071	4	06	2	3	0	0	0	0	0	0
03	002	0012	0075	4	06	2	3	0	0	0	0	0	0
03	002	0012	0075	4	06	2	3	0	0	0	0	0	0
03	002	11	1601	4	06	2	3	0	0	0	0	0	0
03	002	0011	0071	4	06	2	3	0	0	0	0	0	0
03	002	0011	0071	4	06	2	3	0	0	0	0	0	0
03	002	0011	0071	4	06	2	3	0	0	0	0	0	0
03	002	0011	0071	4	06	2	3	0	0	0	0	0	0
03	002	0011	0071	4	06	2	3	0	0	0	0	0	0
03	002	0011	0071	4	06	2	3	0	0	0	0	0	0
03	002	0011	0071	4	06	2	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
03	002	0011	0071	4	06	2	3	0	0	0	0	0	0
03	002	11	1601	4	06	2	3	0	0	0	0	0	0
03	002	0011	0071	4	06	2	3	0	0	0	0	0	0
03	002	11	1601	4	06	2	3	0	0	0	0	0	2
03	002	11	1601	4	06	2	1	3	27	0	0	0	0
03	002	11	1601	4	06	2	1	3	25	0	0	0	0
03	002	11	1601	4	06	2	1	3	12	0	0	0	0
03	002	0012	0075	4	07	1	1	1	20	0	0	0	1
03	002	0012	0075	4	07	1	1	1	22	0	0	0	1
03	002	11	1601	4	07	2	3	0	0	0	0	0	0
03	002	11	1601	4	07	2	3	0	0	0	0	0	0
03	002	0012	0075	4	07	2	3	0	0	0	0	0	0
03	002	0012	0075	4	07	2	3	0	0	0	0	0	0
03	002	0011	0071	4	07	2	3	0	0	0	0	0	0
03	002	0012	0075	4	07	2	3	0	0	0	0	0	0
03	002	0012	0075	4	07	2	1	1	24	0	0	0	0
03	002	11	1601	4	08	2	3	0	0	0	0	0	0
03	002	0011	0071	4	08	2	3	0	0	0	0	0	0
03	002	11	1601	4	09	2	3	0	0	0	0	0	0
03	002	11	1601	4	09	2	3	0	0	0	0	0	0
03	002	11	1601	4	09	2	3	0	0	0	0	0	0
03	002	11	1601	4	09	2	3	0	0	0	0	0	0
03	002	0011	0071	4	11	2	3	0	0	0	0	0	0
03	002	11	1601	4	29	2	3	0	0	0	0	0	0
03	002	11	1601	4	29	2	3	0	0	0	0	0	0
03	002	11	1601	4	29	2	3	0	0	0	0	0	0
03	002	11	1601	4	29	2	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
04	001	0108	0125	11	01	1	3	0	0	0	0	0	0
04	001	0108	0125	11	01	1	3	0	0	0	0	0	0
04	001	1016	0149	11	01	1	3	0	0	1	0	0	0
04	001	1011	0135	11	01	1	3	0	0	1	0	0	0
04	001	0010	0131	11	01	1	3	0	0	1	0	0	0
04	001	1016	0149	11	01	1	3	0	0	1	0	0	0
04	001	1014	0143	11	01	1	3	0	0	1	0	0	0
04	002	0104	0109	11	01	1	3	0	0	1	0	0	0
04	001	1016	0149	11	01	1	3	0	0	1	0	0	0
04	001	0108	0125	11	01	1	3	0	0	1	0	0	0
04	001	0108	0125	11	01	1	3	0	0	1	0	0	0
04	001	1015	0146	11	01	1	1	1	26	1	0	0	0
04	001	0108	0125	11	01	2	3	0	0	0	0	0	0
04	001	1012	0138	11	01	2	3	0	0	1	0	0	0
04	001	0108	0125	11	01	2	3	0	0	1	0	0	0
04	002	0102	0102	11	01	2	3	0	0	1	0	0	0
04	000	0000	0110	11	04	2	3	0	0	3	5	0	0
04	001	1011	0135	11	06	1	3	0	0	0	0	0	0
04	001	1010	0131	11	06	1	3	0	0	0	0	0	0
04	001	1010	0131	11	06	1	3	0	0	0	0	0	0
04	001	1010	0131	11	06	1	3	0	0	0	0	0	0
04	001	1015	0146	11	06	1	3	0	0	0	0	0	0
04	001	0108	0125	11	06	1	3	0	0	0	0	0	1
04	001	1010	0131	11	06	1	3	0	0	0	0	0	1
04	001	1010	0131	11	06	1	3	0	0	0	0	0	1
04	001	1015	0146	11	06	1	3	0	0	0	0	0	1
04	002	0102	0102	11	06	1	3	0	0	0	0	0	1
04	001	1016	0149	11	06	1	3	0	0	0	0	0	1
04	001	0108	0125	11	06	1	3	0	0	0	0	0	1
04	001	0108	0125	11	06	1	3	0	0	0	0	0	1
04	002	0103	0106	11	06	1	1	1	22	0	0	0	1
04	001	1013	0141	11	06	1	1	1	16	0	0	0	1
04	002	0103	0106	11	06	2	3	0	0	0	0	0	0
04	001	1015	0146	11	06	2	3	0	0	0	0	0	0
04	002	0104	0109	11	06	2	3	0	0	0	0	0	0
04	001	1015	0146	11	06	2	3	0	0	0	0	0	0
04	001	1016	0149	11	06	2	3	0	0	0	0	0	0
04	001	1013	0141	11	06	2	3	0	0	0	0	0	0
04	001	1016	0149	11	06	2	3	0	0	0	0	0	0

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
04	001	1011	0135	11	06	2	3	0	0	0	0	0	0
04	001	1011	0135	11	06	2	3	0	0	0	0	0	0
04	002	0104	0109	11	06	2	3	0	0	0	0	0	0
04	002	0104	0109	11	06	2	3	0	0	0	0	0	0
04	002	0102	0102	11	06	2	3	0	0	0	0	0	0
04	001	0108	0125	11	06	2	3	0	0	0	0	0	0
04	001	0109	0128	11	06	2	3	0	0	0	0	0	0
04	001	1011	0135	11	06	2	3	0	0	0	0	0	0
04	001	0108	0125	11	06	2	3	0	0	0	0	0	0
04	001	1015	0146	11	06	2	3	0	0	0	0	0	0
04	001	0109	0128	11	06	2	3	0	0	0	0	0	0
04	002	0103	0106	11	06	2	3	0	0	0	0	0	0
04	001	0108	0125	11	06	2	3	0	0	0	0	0	0
04	001	1013	0141	11	06	2	3	0	0	0	0	0	0
04	001	0108	0125	11	06	2	2	0	0	0	0	0	0
04	001	1011	0135	11	06	2	3	0	0	0	0	0	0
04	001	0108	0125	11	06	2	3	0	0	0	0	0	0
04	001	1015	0146	11	06	2	3	0	0	0	0	0	0
04	001	1015	0146	11	06	2	3	0	0	0	0	0	0
04	001	1010	0131	11	06	2	3	0	0	0	0	0	0
04	002	0103	0106	11	06	2	3	0	0	0	0	0	0
04	002	0104	0109	11	06	2	3	0	0	0	0	0	0
04	001	1010	0131	11	06	2	3	0	0	0	0	0	0
04	001	0109	0128	11	06	2	3	0	0	0	0	0	0
04	001	0108	0125	11	06	2	3	0	0	0	0	0	0
04	002	0102	0102	11	06	2	3	0	0	0	0	0	0
04	002	0104	0109	11	06	2	3	0	0	0	0	0	0
04	002	0103	0106	11	06	2	3	0	0	0	0	0	0
04	001	1011	0135	11	06	2	3	0	0	0	0	0	1
04	002	0104	0109	11	06	2	3	0	0	0	0	0	1
04	001	1011	0135	11	06	2	1	1	20	0	0	0	0
04	001	1013	0138	11	06	2	1	3	10	0	0	0	0
04	002	0103	0106	11	06	2	1	3	26	0	0	0	0
04	001	0108	0125	11	07	1	3	0	0	0	0	0	1
04	002	0104	0109	11	07	1	1	1	24	0	0	0	1
04	001	0108	0125	11	07	2	3	0	0	0	0	0	0
04	001	1015	0146	11	07	2	3	0	0	0	0	0	0
04	001	1014	0143	11	07	2	3	0	0	0	0	0	0
04	001	0108	0125	11	07	2	3	0	0	0	0	0	0
04	001	1015	0146	11	07	2	3	0	0	0	0	0	0
04	002	0102	0102	11	07	2	3	0	0	0	0	0	0
04	001	0108	0125	11	07	2	3	0	0	0	0	0	0
04	001	0109	0128	11	07	2	2	0	0	0	0	0	0
04	002	0103	0106	11	07	3	3	0	0	0	0	0	0
04	001	1010	0131	11	08	2	3	0	0	0	0	0	0
04	001	0108	0125	11	08	2	1	1	26	0	0	0	0
04	001	0108	0125	11	09	1	2	0	0	0	0	0	1
04	001	1010	0131	11	09	2	2	0	0	0	0	0	0
04	002	0103	0106	11	09	2	1	7	22	0	0	0	0
04	000	0000	0146	11	22	2	3	0	0	0	0	0	0
04			0125	11	26	1	3	0	0	0	0	0	1
04	001	1012	0138	11	33	1	3	0	0	0	0	0	1
04	000	0000	0146	11	34	2	3	0	0	0	0	0	0
04			0106	11	50	0	1	3	0	0	0	0	0
04	002	0106	0114	12	06	1	3	0	0	0	0	0	0
04	002	0106	0114	12	06	1	3	0	0	0	0	0	0
04	002	0106	0114	12	06	1	3	0	0	0	0	0	0
04	002	0105	0110	12	06	1	3	0	0	0	0	0	1
04	002	0105	0110	12	06	1	3	0	0	0	0	0	1
04	002	0105	0110	12	06	1	3	0	0	0	0	0	1
04	002	0106	0114	12	06	1	1	3	18	0	0	0	0
04	002	0106	0114	12	06	2	3	0	0	0	0	0	0
04	002	0106	0114	12	06	2	3	0	0	0	0	0	0
04	002	0105	0110	12	06	2	3	0	0	0	0	0	0
04	002	0106	0114	12	06	2	3	0	0	0	0	0	0
04	002	0105	0110	12	06	2	3	0	0	0	0	0	0
04	002	0105	0110	12	06	2	3	0	0	0	0	0	0
04	002	0106	0114	12	06	2	3	0	0	0	0	0	0
04	002	0106	0114	12	06	2	3	0	0	0	0	0	0
04	002	0105	0110	12	06	2	3	0	0	0	0	0	0
04	002	0106	0114	12	06	2	3	0	0	0	0	0	0
04	002	0106	0114	12	07	1	2	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
04	002	0105	0110	12	07	1	1	5	18	0	0	0	1
04	002	0105	0110	12	07	2	3	0	0	0	0	0	0
04	002	0105	0110	12	07	2	3	0	0	0	0	0	0
04	002	0105	0110	12	07	2	3	0	0	0	0	0	0
04	002	0107	0117	13	01	1	3	0	0	1	0	0	0
04	002	0108	0153	13	01	1	1	6	22	1	0	0	0
04	002	0107	0117	13	05	2	3	0	0	0	0	0	0
04	002	0107	0117	13	05	2	3	0	0	0	0	0	0
04	002	0107	0117	13	06	1	3	0	0	0	0	0	0
04	002	0108	0153	13	06	1	3	0	0	0	0	0	1
04	002	0108	0153	13	06	1	3	0	0	0	0	0	1
04	002	0107	0117	13	06	2	3	0	0	0	0	0	0
04	002	0107	0117	13	06	2	3	0	0	0	0	0	0
04	002	0107	0117	13	06	2	3	0	0	0	0	0	0
04	002	0107	0117	13	06	2	3	0	0	0	0	0	0
04	002	0107	0117	13	06	2	3	0	0	0	0	0	0
04	002	0107	0117	13	06	2	3	0	0	0	0	0	0
04	002	0107	0117	13	06	2	3	0	0	0	0	0	0
04	002	0107	0117	13	06	2	3	0	0	0	0	0	0
04	002	0108	0153	13	06	2	3	0	0	0	0	0	0
04	002	0108	0153	13	06	2	3	0	0	0	0	0	0
04	002	0108	0153	13	06	2	3	0	0	0	0	0	0
04	002	0108	0153	13	06	2	3	0	0	0	0	0	0
04	002	0108	0153	13	06	2	3	0	0	0	0	0	0
04	002	0108	0153	13	06	2	3	0	0	0	0	0	0
04	002	0108	0153	13	06	2	3	0	0	0	0	0	0
04	002	0108	0153	13	06	2	3	0	0	0	0	0	1
04	002	0107	0117	13	06	2	2	2	0	0	0	0	0
04	002	0107	0117	13	06	2	2	2	0	0	0	0	0
04	002	0108	0153	13	07	1	3	0	0	0	0	0	1
04	002	0107	0117	13	07	1	3	0	0	0	0	0	1
04	002	0108	0153	13	07	1	3	0	0	0	0	0	1
04	002	0108	0153	13	07	1	1	5	26	0	0	0	1
04	002	0108	0153	13	07	2	3	0	0	0	0	0	0
04			0153	13	20	2	3	0	0	2	0	0	0
04	002	0108	0153	13	23	2	2	0	0	1	0	0	0
04	002	0107	0117	13	29	2	3	0	0	0	0	0	0
04	002	0108	0157	14	01	1	3	0	0	1	0	0	0
04	002	1020	0160	14	01	1	1	1	22	1	0	0	0
04	002	0108	0157	14	03	2	3	0	0	4	0	0	0
04	002	1020	0160	14	05	2	3	0	0	0	0	0	0
04	002	0108	0157	14	06	1	3	0	0	0	0	0	0
04	002	0108	0157	14	06	1	3	0	0	0	0	0	1
04	002	1020	0160	14	06	2	3	0	0	0	0	0	0
04	002	1020	0160	14	06	2	3	0	0	0	0	0	0
04	002	0108	0157	14	06	2	3	0	0	0	0	0	0
04	002	0108	0157	14	06	2	3	0	0	0	0	0	0
04	002	0108	0157	14	06	2	3	0	0	0	0	0	0
04	002	1020	0160	14	06	2	3	0	0	0	0	0	0
04	002	1020	0160	14	06	2	3	0	0	0	0	0	0
04	002	1020	0160	14	07	1	3	0	0	0	0	0	1
04	002	1020	0160	14	07	1	1	1	20	0	0	0	1
04	002	0108	0157	14	07	2	3	0	0	0	0	0	0
04	002	0108	0157	14	07	2	3	0	0	0	0	0	0
04	002	0108	0157	14	07	2	3	0	0	0	0	0	0
04	002	0108	0157	14	08	2	3	0	0	0	0	0	0
04	002	0108	0157	14	29	2	3	0	0	0	0	0	0
04	002	0108	0157	14	29	2	3	0	0	0	0	0	0
04	002	0108	0157	14	29	2	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
05	001	0005	0246	21	01	1	3	0	0	1	0	0	0
05	001	0001	0240	21	01	1	3	0	0	1	0	0	0
05	002	0005	0214	21	01	1	3	0	0	1	0	0	0
05	002	0007	0217	21	01	1	3	0	0	1	0	0	0
05	002	0005	0214	21	01	1	1	1	22	1	0	0	0
05	002	0007	0217	21	06	1	3	0	0	0	0	0	1
05	002	0007	0217	21	06	1	3	0	0	0	0	0	1

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
05	002	0005	0214	21	06	1	3	0	0	0	0	0	1
05	002	0000	0203	21	06	1	1	1	26	0	0	0	1
05	002	0005	0214	21	06	2	3	0	0	0	0	0	0
05	001	0000	0203	21	06	2	3	0	0	0	0	0	0
05	001	0009	0253	21	06	2	0	0	0	0	0	0	0
05	002	0005	0214	21	06	2	3	0	0	0	0	0	0
05	001	0009	0253	21	06	2	0	0	0	0	0	0	0
05	001	0006	0248	21	06	2	3	0	0	0	0	0	0
05	001	0000	0203	21	06	2	3	0	0	0	0	0	0
05	001	0005	0246	21	06	2	3	0	0	0	0	0	0
05	001	0004	0243	21	06	2	3	0	0	0	0	0	0
05	001	0005	0246	21	06	2	3	0	0	0	0	0	0
05	002	0005	0214	21	06	2	3	0	0	0	0	0	0
05	001	0006	0248	21	06	2	3	0	0	0	0	0	0
05	001	0004	0243	21	06	2	3	0	0	0	0	0	0
05	002	0005	0214	21	06	2	3	0	0	0	0	0	0
05	002	0004	0208	21	06	2	1	1	16	0	0	0	0
05	002	0004	0209	21	07	1	4	0	0	0	0	0	1
05	002	0005	0211	21	07	1	3	0	0	0	0	0	1
05	002	0004	0209	21	07	1	4	0	0	0	0	0	1
05	002	0000	0203	21	07	1	3	0	0	0	0	0	1
05	001	0009	0253	21	24	2	0	0	0	0	0	0	0
05	002	0008	0220	22	01	1	3	0	0	1	0	0	0
05	002	0008	0220	22	01	1	3	0	0	1	0	0	0
05	002	0010	0231	22	01	1	3	0	0	1	0	0	0
05	002	0010	0231	22	01	1	3	0	0	1	0	0	0
05	002	0010	0231	22	01	1	3	0	0	1	0	0	0
05	002	0010	0231	22	01	1	3	0	0	1	0	0	0
05	002	0010	0231	22	01	1	3	0	0	1	0	0	0
05	002	0008	0220	22	01	1	3	0	0	1	0	0	0
05	002	0010	0231	22	01	1	3	0	0	1	0	0	0
05	002	0010	0231	22	01	1	1	1	14	1	0	0	0
05	002	0008	0220	22	01	1	1	1	22	1	0	0	0
05	002	0010	0231	22	05	1	3	0	0	0	0	0	0
05	002	0010	0231	22	06	2	3	0	0	0	0	0	0
05	002	0008	0220	22	06	2	3	0	0	0	0	0	0
05	002	0008	0220	22	06	2	2	0	0	0	0	0	0
05	002	0010	0231	22	06	2	3	0	0	0	0	0	0
05	002	0010	0231	22	07	1	3	0	0	0	0	0	1
05	002	0009	0226	22	07	2	3	0	0	0	0	0	1
05	002	0012	0255	23	01	1	3	0	0	0	0	0	0
05	000	0000	0255	23	01	1	1	1	12	1	0	0	0
05	002	0011	0235	23	03	1	4	0	0	7	0	0	0
05			0235	23	03	1	3	0	0	7	0	0	0
05	002	0011	0237	23	05	1	0	0	0	0	0	0	0
05	000	0000	0255	23	05	2	3	0	0	0	0	0	0
05	002	0011	0237	23	06	2	3	0	0	0	0	0	0
05	002	0011	0237	23	06	2	3	0	0	0	0	0	0
05	002	0012	0255	23	06	2	3	0	0	0	0	0	0
05	002	0011	0237	23	06	2	3	0	0	0	0	0	0
05	002	0011	0237	23	06	2	3	0	0	0	0	0	0
05	002	0012	0255	23	06	2	3	0	0	0	0	0	0
05	002	0012	0255	23	06	2	1	3	0	0	0	0	0
05	002	0012	0255	23	07	2	3	0	0	0	0	0	0
05	002	0011	0237	23	14	1	0	0	8	0	0	0	0
05	000	0000	0255	23	17	1	1	1	24	3	0	0	0
05	000	0000	0255	23	17	2	3	0	0	0	0	0	0
05	002	0012	0255	23	30	2	3	0	0	0	0	0	0
05	000	0000	0261	25	01	1	4	0	0	1	0	0	0

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
06	002	0005	0513	51	01	1	3	0	0	1	0	0	0
06	001	0003	0502	51	01	1	3	0	0	1	1	0	0
06	001	0005	0505	51	01	2	3	0	0	1	0	0	0
06	001	0005	0505	51	01	2	2	0	0	1	0	0	0
06	001	0005	0505	51	04	1	3	0	0	5	4	0	0
06	001	0006	0507	51	06	1	3	0	0	0	0	0	1
06	002	0004	0511	51	06	2	3	0	0	0	0	0	0
06	002	0004	0511	51	06	2	3	0	0	0	0	0	0
06	001	0005	0505	51	06	2	3	0	0	0	0	0	0
06	002	0005	0513	51	06	2	3	0	0	0	0	0	0
06	001	0006	0507	51	06	2	3	0	0	0	0	0	0
06	001	0005	0505	51	06	2	3	0	0	0	0	0	0
06	001	0006	0559	51	06	2	3	0	0	0	0	0	0
06	001	0008	0571	51	06	2	3	0	0	0	0	0	0
06	002	0002	0508	51	06	2	3	0	0	0	0	0	0
06	001	0007	0567	51	06	2	3	0	0	0	0	0	0
06	002	0004	0511	51	06	2	3	0	0	0	0	0	0
06	001	0006	0559	51	06	2	3	0	0	0	0	0	0
06	001	0006	0507	51	06	2	3	0	0	0	0	0	0
06	001	0006	0507	51	06	2	3	0	0	0	0	0	0
06	001	0006	0507	51	06	2	3	0	0	0	0	0	0
06	001	0002	0501	51	06	2	3	0	0	0	0	0	1
06	002	0005	0513	51	07	2	2	0	0	0	0	0	0
06	002	0005	0513	51	07	2	3	0	0	0	0	0	0
06	001	0008	0571	51	07	2	3	0	0	0	0	0	0
06	002	0005	0513	51	07	2	3	0	0	0	0	0	0
06	002	0005	0513	51	07	2	3	0	0	0	0	0	0
06	001	0006	0559	51	07	2	1	7	26	0	0	0	0
06	001	0006	0559	51	07	2	1	7	26	0	0	0	0
06	001	0006	0507	51	27	2	3	0	0	0	0	0	0
06	001	0008	0571	51	32	1	1	1	26	0	0	0	1
06	001	0010	0579	52	06	1	1	1	8	0	0	0	1
06	001	0009	0576	52	06	2	3	0	0	0	0	0	0
06	002	0007	0517	52	06	2	3	0	0	0	0	0	0
06	002	0007	0517	52	06	2	3	0	0	0	0	0	0
06	002	1-12	0552	52	06	2	3	0	0	0	0	0	0
06	002	0006	0515	52	06	2	3	0	0	0	0	0	0
06	001	0009	0576	52	06	2	3	0	0	0	0	0	0
06	001	0010	0579	52	06	2	3	0	0	0	0	0	0
06	002	0007	0517	52	06	2	3	0	0	0	0	0	1
06	001	0011	0583	52	06	2	3	0	0	0	0	0	1
06	002	0006	0515	52	07	2	3	0	0	0	0	0	0
06	001	0009	0576	52	08	1	1	1	24	0	0	0	1
06	002	0000	0552	52	12	1	1	3	0	7	0	0	0
06	002	1-12	0552	52	29	2	2	0	0	0	0	0	0
06	002	1-12	0552	52	30	1	3	0	0	0	0	0	0
06	001	0009	0576	52	32	2	3	0	0	0	0	0	0
06	002	0008	0520	53	05	0	3	0	0	0	0	0	0
06	002	0008	0520	53	06	1	3	0	0	0	0	0	0
06	002	0008	0520	53	06	1	3	0	0	0	0	0	1
06	002	0009	0524	53	06	2	3	0	0	0	0	0	0
06	002	0008	0520	53	06	2	3	0	0	0	0	0	1
06	002	0011	0542	54	01	2	3	0	0	1	0	0	0
06	002	0012	0547	54	06	1	3	3	0	0	0	0	1
06	002	0012	0547	54	06	2	3	0	0	0	0	0	0
06	002	0011	0542	54	06	2	3	0	0	0	0	0	0
06	002	0012	0547	54	06	2	3	0	0	0	0	0	0
06	002	0010	0530	54	06	2	3	0	0	0	0	0	0
06	002	0010	0530	54	06	2	3	0	0	0	0	0	0
06	002	0012	0547	54	06	2	3	0	0	0	0	0	0
06	002	0011	0542	54	06	2	3	0	0	0	0	0	0
06	002	0012	0547	54	07	1	3	3	0	0	0	0	1
06	002	0012	0547	54	07	2	3	3	0	0	0	0	0
06	002	0008	0540	55	06	0	1	3	20	0	0	0	1
06	002	0012	0544	55	06	1	3	0	0	0	0	0	0
06	002	0010	0527	55	06	1	3	0	0	0	0	0	1
06	002	0008	0540	55	06	1	3	0	0	0	0	0	1
06	002	0010	0527	55	06	1	3	0	0	0	0	0	1
06	002	0008	0540	55	06	2	3	0	0	0	0	0	0
06	002	0010	0527	55	06	2	3	0	0	0	0	0	0
06	002	0012	0544	55	06	2	3	0	0	0	0	0	0
06	002	0011	0532	55	07	2	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
06	002	0011	0532	55	07	2	4	0	0	0	0	0	0
06	002	0008	0540	55	08	2	3	0	0	0	0	0	0
06	002	0011	0532	55	21	2	3	0	0	3	0	0	0
06	000	0000	0562	56	01	1	3	0	0	1	0	0	0
06	002	0003	0549	56	06	1	3	0	0	0	0	0	0
06	002	0003	0549	56	06	1	3	0	0	0	0	0	0
06	002	0003	0549	56	06	1	1	1	0	0	0	0	0
06	002	0014	0562	56	06	2	3	0	0	0	0	0	0
06	002	0013	0557	56	06	2	3	0	0	0	0	0	0
06	002	0013	0557	56	06	2	3	0	0	0	0	0	0
06	002	0014	0562	56	06	2	3	0	0	0	0	0	1
06	002	0014	0562	56	06	2	1	3	0	0	0	0	0
06	002	0014	0562	56	06	5	3	0	0	0	0	0	0
06	002	0015	0565	56	07	1	2	0	0	0	0	0	1
06	002	0015	0565	56	08	2	1	3	22	0	0	0	0
06	000	0000	0562	56	08	3	3	0	0	0	0	0	0
06	002	0003	0549	56	12	1	3	0	0	5	7	0	0
06	000	0000	0562	56	39	2	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
07	001	04-6	0609	61	01	1	4	0	0	0	0	0	0
07	002	005A	0615	61	01	1	3	0	0	0	0	0	0
07	002	005A	0615	61	01	1	3	0	0	0	0	0	0
07	000	0000	0612	61	01	1	3	0	0	1	0	0	0
07	7-1	02-A	0676	61	01	1	4	0	0	1	0	0	0
07	000	0000	0653	61	01	1	3	0	0	1	0	0	0
07	000	0000	0653	61	01	1	3	0	0	1	0	0	0
07	000	0000	0653	61	01	1	3	0	0	1	0	0	0
07	7-1	02-A	0676	61	01	1	3	0	0	1	0	0	0
07	7-1	02-A	0676	61	01	1	3	0	0	1	0	0	0
07	000	0000	0615	61	01	1	1	1	22	1	0	0	0
07	7-1	02-A	0676	61	01	1	1	1	14	1	0	0	0
07	000	0000	0615	61	01	2	3	0	0	1	0	0	0
07	000	0000	0612	61	01	2	3	0	0	1	0	0	0
07	001	0000	0601	61	03	1	3	0	0	3	0	0	0
07	000	0000	0615	61	03	1	1	1	24	3	0	0	0
07	000	0000	0653	61	04	1	3	0	0	3	5	0	0
07	000	0000	0612	61	04	1	3	0	0	3	5	0	0
07	001	01-A	0653	61	05	2	3	0	0	0	0	0	0
07	002	006A	0620	61	05	2	3	0	0	0	0	0	0
07	002	0005	0622	61	06	1	3	0	0	0	0	0	0
07	000	0000	0653	61	06	1	3	0	0	0	0	0	0
07	7-1	01-3	0606	61	06	1	3	0	0	0	0	0	1
07	002	006A	0620	61	06	1	0	0	0	0	0	0	1
07	7-1	01-3	0606	61	06	1	3	0	0	0	0	0	1
07	002	006A	0620	61	06	1	0	0	0	0	0	0	1
07	7-1	01-3	0606	61	06	1	3	0	0	0	0	0	1
07	002	006A	0620	61	06	1	0	0	0	0	0	0	1
07	7-1	01-3	0606	61	06	2	3	0	0	0	0	0	0
07	7-1	01-3	0606	61	06	2	3	0	0	0	0	0	0
07	7-1	01-3	0606	61	06	2	3	0	0	0	0	0	0
07	7-1	01-3	0606	61	06	2	3	0	0	0	0	0	0
07	7-1	01-3	0606	61	06	2	3	0	0	0	0	0	0
07	002	005A	0615	61	06	2	3	0	0	0	0	0	0
07	7-1	01-3	0606	61	06	2	3	0	0	0	0	0	0
07	001	04-6	0609	61	06	2	3	0	0	0	0	0	0
07	7-1	01-3	0606	61	06	2	3	0	0	0	0	0	0
07	001	01-A	0653	61	06	2	3	0	0	0	0	0	0
07	001	01-A	0653	61	06	2	3	0	0	0	0	0	0
07	001	04-6	0609	61	06	2	3	0	0	0	0	0	0
07	002	005A	0615	61	06	2	3	0	0	0	0	0	0
07	001	04-6	0609	61	06	2	3	0	0	0	0	0	0
07	7-1	02-A	0676	61	06	2	3	0	0	0	0	0	0
07	001	0008	0680	61	06	2	3	0	0	0	0	0	0
07	7-1	02-A	0676	61	06	2	3	0	0	0	0	0	0
07	002	0000	0612	61	06	2	3	0	0	0	0	0	0
07	001	04-6	0609	61	06	2	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
07	001	01-A	0653	61	06	2	3	0	0	0	0	0	0
07	7-1	01-3	0606	61	06	2	3	0	0	0	0	0	0
07	002	0000	0612	61	06	2	3	0	0	0	0	0	0
07	001	01-A	0653	61	06	2	3	0	0	0	0	0	0
07	7-1	02-A	0676	61	06	2	3	0	0	0	0	0	0
07	7-1	01-3	0606	61	06	2	3	0	0	0	0	0	0
07	002	005A	0615	61	06	2	3	0	0	0	0	0	0
07	001	0008	0680	61	06	2	3	0	0	0	0	0	0
07	002	005A	0615	61	06	2	3	0	0	0	0	0	0
07	001	0007	0679	61	06	2	3	0	0	0	0	0	0
07	7-1	02-A	0676	61	06	2	3	0	0	0	0	0	0
07	001	01-A	0653	61	06	2	3	0	0	0	0	0	0
07	001	01-A	0653	61	06	2	3	0	0	0	0	0	0
07	7-1	01-3	0606	61	06	2	3	0	0	0	0	0	0
07	000	0000	0653	61	06	2	3	0	0	0	0	0	0
07	002	0000	0612	61	06	2	3	0	0	0	0	0	0
07	002	006A	0620	61	06	2	3	0	0	0	0	0	0
07	002	05-A	0615	61	06	2	3	0	0	0	0	0	0
07	7-1	02-A	0676	61	06	2	3	0	0	0	0	0	0
07	002	006A	0620	61	06	2	3	0	0	0	0	0	0
07	001	0007	0679	61	06	2	3	0	0	0	0	0	0
07	002	0005	0622	61	06	2	3	0	0	0	0	0	0
07	002	006A	0620	61	06	2	3	0	0	0	0	0	0
07	002	006A	0620	61	06	2	3	0	0	0	0	0	0
07	002	006A	0620	61	06	2	3	0	0	0	0	0	0
07	002	005A	0615	61	06	2	3	0	0	0	0	0	0
07	000	0000	0653	61	06	2	3	0	0	0	0	0	0
07	002	006A	0620	61	06	2	3	0	0	0	0	0	0
07	002	006A	0620	61	06	2	3	0	0	0	0	0	0
07	001	04-6	0609	61	06	2	3	0	0	0	0	0	0
07	002	006A	0620	61	06	2	3	0	0	0	0	0	0
07	001	01-A	0653	61	06	2	3	0	0	0	0	0	0
07	002	005A	0615	61	06	2	3	0	0	0	0	0	0
07	001	01-A	0653	61	06	2	3	0	0	0	0	0	0
07	001	01-A	0653	61	06	2	3	0	0	0	0	0	0
07	001	01-A	0653	61	06	2	3	0	0	0	0	0	0
07	002	0000	0612	61	06	2	3	0	0	0	0	0	0
07	001	0008	0680	61	06	2	3	0	0	0	0	0	0
07	001	01-A	0653	61	06	2	3	0	0	0	0	0	0
07	001	01-A	0653	61	06	2	3	0	0	0	0	0	0
07	7-1	02-A	0676	61	06	2	3	0	0	0	0	0	0
07	002	006A	0620	61	06	2	3	0	0	0	0	0	0
07	7-1	02-A	0676	61	06	2	3	0	0	0	0	0	0
07	001	0007	0679	61	06	2	3	0	0	0	0	0	1
07	002	0000	0612	61	06	2	3	0	0	0	0	0	1
07	002	0000	0612	61	06	2	3	0	0	0	0	0	1
07	002	05-A	0615	61	06	2	1	3	24	0	0	0	0
07	000	0000	0609	61	06	2	1	7	16	0	0	0	0
07	002	005A	0615	61	07	2	3	0	0	0	0	0	0
07	7-1	01-3	0606	61	07	2	3	0	0	0	0	0	0
07	000	0000	0612	61	07	2	3	0	0	0	0	0	0
07	002	0000	0612	61	07	2	3	0	0	0	0	0	0
07	7-1	01-3	0606	61	07	2	3	0	0	0	0	0	0
07	002	005A	0615	61	07	2	3	0	0	0	0	0	0
07	002	005A	0615	61	07	2	3	0	0	0	0	0	0
07	7-1	01-3	0606	61	07	2	3	0	0	0	0	0	0
07	001	01-A	0653	61	07	2	3	0	0	0	0	0	0
07	002	0000	0612	61	07	2	1	5	0	0	0	0	0
07	7-1	01-3	0606	61	08	2	3	0	0	0	0	0	0
07	7-1	02-A	0676	61	08	2	2	0	0	0	0	0	0
07	7-1	01-3	0606	61	08	2	3	0	0	0	0	0	0
07	002	006A	0620	61	08	2	3	0	0	0	0	0	0
07	000	0000	0615	61	12	1	3	0	0	4	0	0	0
07	000	0000	0609	61	12	1	3	0	0	7	5	0	0
07	001	01-3	0606	61	17	2	3	0	0	3	0	0	0
07	002	006A	0620	61	21	2	3	0	0	3	0	0	0
07	001	01-A	0653	61	22	2	3	0	0	0	0	0	0
07	001	04-6	0609	61	22	2	1	3	24	0	0	0	0
07	002	0005	0622	61	23	2	3	0	0	0	0	0	0
07			0679	61	49	1	3	0	0	6	6	0	0
07	002	0006	0626	62	06	2	3	0	0	0	0	0	0
07	002	0006	0626	62	06	2	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
07	002	0006	0626	62	06	2	3	0	0	0	0	0	0
07	002	0006	0626	62	06	3	3	0	0	0	0	0	0
07	7-2	007A	0645	63	01	1	3	0	0	1	0	0	0
07	7-2	007A	0645	63	05	1	3	0	0	0	0	0	0
07	7-2	007A	0645	63	05	1	3	0	0	0	0	0	0
07	002	0007	0638	63	05	1	3	0	0	0	0	0	0
07	002	0007	0638	63	05	1	3	0	0	0	0	0	0
07	7-2	007A	0645	63	06	1	3	0	0	0	0	0	1
07	002	0007	0633	63	06	2	3	0	0	0	0	0	0
07	002	0007	0633	63	06	2	3	0	0	0	0	0	0
07	002	0007	0633	63	06	2	3	0	0	0	0	0	0
07	002	0007	0633	63	06	2	3	0	0	0	0	0	0
07	7-2	007A	0645	63	06	2	3	0	0	0	0	0	0
07	002	0007	0638	63	06	2	3	0	0	0	0	0	0
07	002	0007	0633	63	06	2	3	0	0	0	0	0	0
07	002	0007	0637	63	06	2	3	0	0	0	0	0	0
07	002	0007	0638	63	07	2	2	0	0	0	0	0	0
07	002	0007	0638	63	07	2	3	0	0	0	0	0	0
07	7-2	007A	0645	63	08	2	3	0	0	0	0	0	0
07	000	0000	0661	64	00	1	1	1	26	0	0	0	1
07	002	0008	0648	64	03	1	3	0	0	0	0	0	0
07	002	0009	0661	64	06	1	1	0	0	0	0	0	0
07	002	0009	0661	64	06	1	1	0	0	0	0	0	0
07	002	0009	0661	64	06	1	4	0	0	0	0	0	0
07	002	0009	0661	64	06	1	1	0	0	0	0	0	0
07	002	0009	0661	64	06	1	1	0	0	0	0	0	0
07	002	0009	0661	64	06	1	4	0	0	0	0	0	0
07	002	0017	0684	64	06	1	3	0	0	0	0	0	0
07	002	0009	0661	64	06	1	4	0	0	0	0	0	0
07	002	0009	0661	64	06	1	1	0	0	0	0	0	0
07	002	0009	0661	64	06	1	4	0	0	0	0	0	0
07	002	0009	0661	64	06	1	3	0	0	0	0	0	0
07	002	0017	0684	64	06	1	3	0	0	0	0	0	0
07	000	0000	0673	64	06	1	3	0	0	0	0	0	1
07	002	0009	0664	64	06	1	3	0	0	0	0	0	1
07	002	0009	0661	64	06	1	1	2	28	0	0	0	0
07	002	0009	0661	64	06	1	1	2	28	0	0	0	0
07	002	0008	0648	64	06	2	3	0	0	0	0	0	0
07	002	0008	0648	64	06	2	3	0	0	0	0	0	0
07	002	0010	0673	64	06	2	4	0	0	0	0	0	0
07	002	0008	0648	64	06	2	2	0	0	0	0	0	0
07	002	0008	0648	64	06	2	3	0	0	0	0	0	0
07	002	0008	0648	64	06	2	3	0	0	0	0	0	0
07	002	0010	0673	64	06	2	3	0	0	0	0	0	0
07	002	0008	0648	64	06	2	3	0	0	0	0	0	0
07	000	0000	0673	64	06	2	3	0	0	0	0	0	0
07	002	0008	0648	64	06	2	3	0	0	0	0	0	0
07	002	0009	0661	64	06	2	3	0	0	0	0	0	0
07	002	0010	0673	64	06	2	3	0	0	0	0	0	0
07	002	0010	0673	64	06	2	3	0	0	0	0	0	0
07	002	0010	0673	64	06	2	3	0	0	0	0	0	0
07	002	0008	0648	64	06	2	3	0	0	0	0	0	0
07	002	0009	0661	64	06	2	3	0	0	0	0	0	0
07	002	0010	0673	64	06	2	3	0	0	0	0	0	0
07	002	0009	0664	64	06	2	3	0	0	0	0	0	0
07	002	0008	0648	64	06	2	3	0	0	0	0	0	0
07	002	0009	0664	64	06	2	3	0	0	0	0	0	0
07	002	0008	0648	64	06	2	3	0	0	0	0	0	1
07	002	0008	0648	64	06	2	3	0	0	0	0	0	1
07	002	0009	0661	64	06	2	3	0	0	0	0	0	1
07	002	0009	0661	64	06	2	3	0	0	0	0	0	1
07	002	0008	0648	64	06	2	3	0	0	0	0	0	1
07	002	0009	0661	64	06	2	3	0	0	0	0	0	1
07	002	0010	0673	64	06	2	2	0	0	0	0	0	1
07	002	0008	0648	64	06	2	3	0	0	0	0	0	1
07	002	0008	0648	64	06	2	2	0	0	0	0	0	1
07	002	0009	0661	64	06	2	4	0	0	0	0	0	1
07	002	0008	0648	64	06	2	3	0	0	0	0	0	1
07	002	0010	0673	64	06	2	2	0	0	0	0	0	1
07	002	0010	0673	64	06	2	4	0	0	0	0	0	1
07	002	0009	0661	64	06	2	3	0	0	0	0	0	1
07	002	0009	0661	64	06	2	3	0	0	0	0	0	1

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
07	002	0008	0648	64	06	2	3	0	0	0	0	0	1
07	002	0009	0661	64	06	2	3	0	0	0	0	0	1
07	002	0017	0684	64	06	2	1	3	20	0	0	0	0
07	000	0000	0661	64	07	1	1	1	22	0	0	0	1
07	002	0009	0661	64	07	1	1	5	26	0	0	0	1
07	002	0009	0661	64	07	1	1	5	24	0	0	0	1
07			0661	64	07	1	1	5	30	0	0	0	1
07	001	0010	0685	64	07	2	3	0	0	0	0	0	0
07	002	0009	0661	64	07	2	3	0	0	0	0	0	0
07	002	0009	0664	64	07	2	3	0	0	0	0	0	0
07	002	0008	0648	64	07	2	4	0	0	0	0	0	0
07	002	0010	0673	64	07	2	3	0	0	0	0	0	0
07	000	0000	0661	64	07	2	3	0	0	0	0	0	0
07	002	0010	0673	64	07	2	2	0	0	0	0	0	1
07	002	0010	0673	64	07	2	1	3	12	0	0	0	1
07	002	0009	0661	64	07	2	1	5	24	0	0	0	1
07	002	0009	0661	64	08	2	2	0	0	0	0	0	0
07	002	0009	0661	64	08	2	2	0	0	0	0	0	0
07	002	0017	0684	64	08	2	2	0	0	0	0	0	0
07	002	0009	0661	64	08	2	1	2	26	0	0	0	0
07	000	0000	0648	64	13	1	1	8	26	0	0	0	1
07	000	0000	0661	64	16	2	3	0	0	3	0	0	0
07			0673	64	21	2	3	0	0	3	0	0	0
07	002	0009	0661	64	22	2	3	0	0	0	0	0	0
07	000	0000	0673	64	22	2	3	0	0	0	0	0	0
07	002	0009	0661	64	22	2	3	0	0	0	0	0	0
07	002	0010	0673	64	25	1	1	5	0	0	0	0	1
07			0673	64	27	2	3	0	0	0	0	0	0
07	002	0009	0661	64	29	2	2	0	0	0	0	0	1
07	002	0010	0673	64	29	2	2	0	0	0	0	0	1
07	002	0009	0661	64	30	2	3	0	0	0	0	0	0
07	000	0000	0673	64	30	2	4	0	0	0	0	0	0
07	000	0000	0648	64	38	1	1	1	20	0	0	0	1
07	000	0000	0666	64	39	1	1	1	16	0	0	0	1
07	000	0000	0673	64	43	2	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
08	002	0001	0706	71	01	1	3	0	0	1	0	0	0
08	002	0001	0706	71	01	1	3	0	0	1	0	0	0
08	001	0001	0710	71	01	1	3	0	0	1	0	0	0
08	001	0001	0710	71	01	1	3	0	0	1	0	0	0
08	002	0002	0715	71	01	1	3	0	0	1	0	0	0
08	002	0001	0706	71	01	1	3	0	0	1	0	0	0
08	002	0001	0706	71	01	1	3	0	0	1	0	0	0
08	001	0002	0722	71	01	1	3	0	0	1	0	0	0
08	001	0002	0722	71	01	1	3	0	0	1	0	0	0
08	001	0002	0722	71	01	1	3	0	0	1	0	0	0
08	001	0002	0722	71	01	1	3	0	0	1	0	0	0
08	001	0002	0722	71	01	1	3	0	0	1	0	0	0
08	001	0001	0710	71	01	1	3	0	0	1	0	0	0
08	000	0000	0715	71	01	1	3	0	0	1	0	0	0
08	001	0001	0710	71	01	1	3	0	0	1	0	0	0
08	001	0001	0710	71	01	1	3	0	0	1	0	0	0
08	002	0002	0778	71	01	1	3	0	0	1	0	0	0
08	000	0000	0715	71	01	1	3	0	0	1	0	0	0
08	002	0004	0758	71	01	1	3	0	0	1	0	0	0
08	002	0001	0706	71	01	1	3	0	0	1	0	0	0
08	8-2	0000	0704	71	01	1	3	0	0	1	0	0	0
08	002	0002	0778	71	01	1	1	1	14	1	0	0	0
08	001	0002	0722	71	01	1	1	1	20	1	0	0	0
08	001	0002	0722	71	01	1	1	1	18	1	0	0	0
08	001	0002	0722	71	01	1	1	1	18	1	0	0	0
08	001	0001	0710	71	01	1	1	1	18	1	0	0	0
08	002	0001	0706	71	01	1	1	1	18	1	0	0	0
08	002	0001	0706	71	01	1	1	1	24	2	0	0	0
08	002	0001	0706	71	01	1	1	8	16	1	0	0	0
08	000	0000	0715	71	01	2	3	0	0	1	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
08	002	0001	0706	71	01	2	3	0	0	1	0	0	0
08	000	0000	0715	71	01	2	2	0	0	1	0	0	0
08	000	0000	0715	71	01	2	3	0	0	1	0	0	0
08	001	0002	0722	71	01	2	3	0	0	1	0	0	0
08	000	0000	0715	71	01	2	3	0	0	1	0	0	0
08	002	0001	0706	71	01	2	3	0	0	1	0	0	0
08	000	0000	0715	71	01	2	3	0	0	1	0	0	0
08	000	0000	0715	71	01	2	3	0	0	1	0	0	0
08	001	0002	0722	71	01	2	3	0	0	1	0	0	0
08	001	0002	0722	71	01	2	3	0	0	1	0	0	0
08	001	0001	0710	71	01	2	3	0	0	1	0	0	0
08	000	0000	0715	71	01	2	3	0	0	1	0	0	0
08	002	0002	0715	71	01	2	3	0	0	1	0	0	0
08	002	0002	0715	71	01	2	3	0	0	1	0	0	0
08	001	0001	0710	71	01	2	3	0	0	1	0	0	0
08	001	0001	0710	71	01	2	2	0	0	1	0	0	0
08	001	0001	0710	71	01	2	1	1	10	1	0	0	0
08	001	0002	0722	71	01	2	1	1	14	1	0	0	0
08	002	0002	0715	71	02	1	3	0	0	0	0	0	0
08	002	0002	0715	71	02	1	3	0	0	0	0	0	0
08	002	0001	0706	71	02	2	3	0	0	0	0	0	0
08	000	0000	0715	71	03	1	3	0	0	3	0	0	0
08	002	0003	0756	71	04	1	3	0	0	4	6	0	0
08	002	0001	0706	71	05	0	3	0	0	0	0	0	0
08	002	0002	0715	71	05	1	3	0	0	0	0	0	0
08	8-1	0003	0726	71	05	2	2	0	0	0	0	0	0
08	001	0002	0722	71	05	2	2	0	0	0	0	0	0
08	002	0001	0706	71	05	2	3	0	0	0	0	0	0
08	001	0001	0710	71	05	2	1	1	12	1	0	0	0
08	8-2	0000	0704	71	06	1	3	0	0	0	0	0	0
08	001	0002	0722	71	06	1	3	0	0	0	0	0	0
08	002	0002	0715	71	06	1	3	0	0	0	0	0	0
08	001	0002	0722	71	06	1	3	0	0	0	0	0	0
08	000	0000	0715	71	06	1	4	0	0	0	0	0	0
08	002	0002	0715	71	06	1	3	0	0	0	0	0	0
08	001	0001	0710	71	06	1	3	0	0	0	0	0	0
08	001	0002	0722	71	06	1	3	0	0	0	0	0	1
08	002	0001	0706	71	06	1	3	0	0	0	0	0	1
08	001	0002	0722	71	06	1	3	0	0	0	0	0	1
08	002	0002	0715	71	06	1	3	0	0	0	0	0	1
08	001	0002	0722	71	06	1	3	0	0	0	0	0	1
08	001	0002	0722	71	06	1	3	0	0	0	0	0	1
08	001	0002	0722	71	06	1	3	0	0	0	0	0	1
08	002	0002	0715	71	06	1	3	0	0	0	0	0	1
08	001	0003	0726	71	06	1	3	0	0	0	0	0	1
08	001	0002	0722	71	06	1	3	0	0	0	0	0	1
08	001	0001	0710	71	06	1	3	0	0	0	0	0	1
08	001	0002	0722	71	06	1	3	0	0	0	0	0	1
08	001	0002	0722	71	06	1	3	0	0	0	0	0	1
08	001	0002	0722	71	06	1	3	0	0	0	0	0	1
08	002	0002	0715	71	06	1	1	1	26	0	0	0	1
08	002	0002	0715	71	06	2	3	0	0	0	0	0	0
08	002	0002	0715	71	06	2	3	0	0	0	0	0	0
08	001	0001	0710	71	06	2	3	0	0	0	0	0	0
08	001	0001	0710	71	06	2	3	0	0	0	0	0	0
08	001	0001	0710	71	06	2	3	0	0	0	0	0	0
08	001	0001	0710	71	06	2	3	0	0	0	0	0	0
08	8-1	0000	0701	71	06	2	3	0	0	0	0	0	0
08	8-1	0000	0701	71	06	2	3	0	0	0	0	0	0
08	001	0001	0710	71	06	2	3	0	0	0	0	0	0
08	001	0001	0710	71	06	2	3	0	0	0	0	0	0
08	002	0002	0715	71	06	2	3	0	0	0	0	0	0
08	001	0001	0710	71	06	2	3	0	0	0	0	0	0
08	001	0001	0710	71	06	2	3	0	0	0	0	0	0
08	002	0001	0706	71	06	2	3	0	0	0	0	0	0
08	002	0001	0706	71	06	2	3	0	0	0	0	0	0
08	001	0001	0710	71	06	2	3	0	0	0	0	0	0
08	002	0002	0715	71	06	2	3	0	0	0	0	0	0
08	001	0001	0710	71	06	2	3	0	0	0	0	0	0
08	001	0003	0726	71	06	2	3	0	0	0	0	0	0
08	002	0002	0715	71	06	2	3	0	0	0	0	0	0
08	001	0002	0722	71	06	2	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
08	001	0001	0710	71	06	2	3	0	0	0	0	0	0
08	001	0001	0710	71	06	2	3	0	0	0	0	0	0
08	001	0002	0722	71	06	2	3	0	0	0	0	0	0
08	002	0002	0715	71	06	2	3	0	0	0	0	0	0
08	001	0001	0710	71	06	2	3	0	0	0	0	0	0
08	002	0001	0706	71	06	2	3	0	0	0	0	0	0
08	001	0001	0710	71	06	2	3	0	0	0	0	0	0
08	002	0002	0715	71	06	2	3	0	0	0	0	0	0
08	001	0001	0710	71	06	2	3	0	0	0	0	0	0
08	001	0002	0722	71	06	2	3	0	0	0	0	0	0
08	001	0001	0710	71	06	2	3	0	0	0	0	0	0
08	001	0002	0722	71	06	2	3	0	0	0	0	0	0
08	001	0001	0710	71	06	2	3	0	0	0	0	0	0
08	002	0002	0715	71	06	2	3	0	0	0	0	0	0
08	002	0002	0715	71	06	2	3	0	0	0	0	0	0
08	001	0002	0722	71	06	2	3	0	0	0	0	0	0
08	001	0001	0710	71	06	2	3	0	0	0	0	0	0
08	001	0002	0722	71	06	2	3	0	0	0	0	0	0
08	001	0001	0710	71	06	2	3	0	0	0	0	0	0
08	002	0002	0715	71	06	2	3	0	0	0	0	0	0
08	001	0001	0710	71	06	2	3	0	0	0	0	0	0
08	002	0002	0715	71	06	2	3	0	0	0	0	0	0
08	001	0003	0726	71	06	2	3	0	0	0	0	0	0
08	002	0002	0715	71	06	2	3	0	0	0	0	0	0
08	001	0001	0710	71	06	2	3	0	0	0	0	0	0
08	002	0002	0715	71	06	2	3	0	0	0	0	0	0
08	001	0003	0726	71	06	2	3	0	0	0	0	0	0
08	001	0002	0722	71	06	2	3	0	0	0	0	0	0
08	001	0003	0726	71	06	2	3	0	0	0	0	0	0
08	001	0002	0722	71	06	2	3	0	0	0	0	0	0
08	002	0002	0715	71	06	2	3	0	0	0	0	0	0
08	001	0002	0722	71	06	2	3	0	0	0	0	0	0
08	002	0002	0715	71	06	2	3	0	0	0	0	0	0
08	002	0001	0706	71	06	2	3	0	0	0	0	0	0
08	002	0002	0715	71	06	2	3	0	0	0	0	0	0
08	002	0002	0715	71	06	2	3	0	0	0	0	0	0
08	001	0002	0722	71	06	2	3	0	0	0	0	0	0
08	002	0001	0706	71	06	2	3	0	0	0	0	0	0
08	001	0002	0722	71	06	2	3	0	0	0	0	0	0
08	001	0002	0722	71	06	2	3	0	0	0	0	0	0
08	001	0002	0722	71	06	2	3	0	0	0	0	0	0
08	002	0002	0715	71	06	2	3	0	0	0	0	0	0
08	001	0002	0722	71	06	2	3	0	0	0	0	0	0
08	001	0001	0710	71	06	2	3	0	0	0	0	0	0
08	001	0002	0722	71	06	2	3	0	0	0	0	0	0
08	001	0002	0722	71	06	2	3	0	0	0	0	0	0
08	001	0002	0722	71	06	2	3	0	0	0	0	0	0
08	002	0001	0706	71	06	2	3	0	0	0	0	0	0
08	001	0002	0722	71	06	2	3	0	0	0	0	0	0
08	002	0002	0715	71	06	2	3	0	0	0	0	0	0
08	002	0001	0706	71	06	2	3	0	0	0	0	0	0
08	001	0002	0722	71	06	2	3	0	0	0	0	0	0
08	001	0002	0722	71	06	2	3	0	0	0	0	0	0
08	002	0002	0715	71	06	2	3	0	0	0	0	0	0
08	001	0002	0722	71	06	2	3	0	0	0	0	0	0
08	002	0002	0715	71	06	2	3	0	0	0	0	0	0
08	001	0001	0710	71	06	2	2	0	0	0	0	0	0
08	001	0002	0722	71	06	2	3	0	0	0	0	0	0
08	001	0002	0722	71	06	2	3	0	0	0	0	0	0
08	001	0002	0722	71	06	2	3	0	0	0	0	0	0
08	001	0002	0722	71	06	2	3	0	0	0	0	0	0
08	002	0001	0706	71	06	2	3	0	0	0	0	0	1
08	002	0001	0706	71	06	2	3	0	0	0	0	0	1
08	002	0001	0706	71	06	2	3	0	0	0	0	0	1
08	002	0001	0706	71	06	2	3	0	0	0	0	0	1
08	002	0001	0706	71	06	2	3	0	0	0	0	0	1
08	002	0001	0706	71	06	2	3	0	0	0	0	0	1
08	002	0001	0706	71	06	2	3	0	0	0	0	0	1
08	002	0001	0706	71	06	2	3	0	0	0	0	0	1
08	001	0002	0722	71	06	2	1	1	12	0	0	0	0
08	001	0001	0710	71	06	2	1	1	18	0	0	0	0
08	001	0001	0710	71	06	2	1	1	24	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
08	002	0002	0778	71	06	2	1	3	26	0	0	0	0
08	002	0002	0778	71	06	2	1	3	30	0	0	0	0
08	002	0001	0706	71	07	1	0	0	0	0	0	0	1
08	002	0001	0706	71	07	1	1	5	18	0	0	0	1
08	001	0001	0710	71	07	2	2	0	0	0	0	0	0
08	001	0001	0710	71	07	2	3	0	0	0	0	0	0
08	001	0001	0710	71	07	2	3	0	0	0	0	0	0
08	002	0002	0715	71	07	2	3	0	0	0	0	0	0
08	002	0002	0715	71	07	2	3	0	0	0	0	0	0
08	002	0002	0715	71	07	2	3	0	0	0	0	0	0
08	002	0002	0715	71	07	2	3	0	0	0	0	0	0
08	002	0002	0715	71	07	2	3	0	0	0	0	0	0
08	001	0002	0722	71	07	2	2	0	0	0	0	0	0
08	001	0001	0710	71	09	2	3	0	0	0	0	0	0
08	001	0001	0710	71	11	2	1	2	12	0	0	0	0
08	001	0001	0710	71	12	1	3	0	0	4	5	0	0
08	001	0002	0722	71	19	1	3	0	0	3	0	0	0
08			0715	71	21	1	3	0	0	3	0	0	0
08	002	0001	0706	71	30	2	3	0	0	0	0	0	0
08	000	0000	0761	72	01	1	3	0	0	1	0	0	0
08	001	0004	0729	72	01	1	3	0	0	1	0	0	0
08	001	0004	0729	72	01	1	3	0	0	1	0	0	0
08	000	0000	0761	72	01	1	3	0	0	1	0	0	0
08	000	0000	0761	72	01	1	3	0	0	1	0	0	0
08	000	0000	0761	72	01	1	3	0	0	1	0	0	0
08	000	0000	0761	72	01	1	1	1	16	1	0	0	0
08	002	0005	0761	72	01	2	3	0	0	1	0	0	0
08	000	0000	0761	72	01	2	3	0	0	1	0	0	0
08	002	0005	0761	72	01	2	3	0	0	1	0	0	0
08	000	0000	0761	72	01	2	3	0	0	1	0	0	0
08	000	0000	0761	72	01	2	3	0	0	1	0	0	0
08	002	0005	0761	72	01	2	3	0	0	1	0	0	0
08	000	0000	0761	72	02	1	3	0	0	0	0	0	0
08	002	0005	0761	72	06	1	3	0	0	0	0	0	0
08	001	0004	0729	72	06	1	3	0	0	0	0	0	0
08	001	0004	0729	72	06	1	3	0	0	0	0	0	0
08	001	0004	0729	72	06	1	3	0	0	0	0	0	0
08	001	0004	0729	72	06	1	3	0	0	0	0	0	0
08	002	0005	0761	72	06	2	3	0	0	0	0	0	0
08	002	0005	0761	72	06	2	3	0	0	0	0	0	0
08	001	0004	0729	72	06	2	3	0	0	0	0	0	0
08	001	0004	0729	72	06	2	3	0	0	0	0	0	0
08	001	0005	0761	72	06	2	3	0	0	0	0	0	0
08	001	0004	0729	72	06	2	3	0	0	0	0	0	0
08	002	0005	0761	72	06	2	3	0	0	0	0	0	0
08	001	0004	0729	72	06	2	3	0	0	0	0	0	0
08	001	0005	0761	72	06	2	3	0	0	0	0	0	0
08	001	0004	0729	72	06	2	3	0	0	0	0	0	0
08	001	0004	0729	72	06	2	2	0	0	0	0	0	0
08	002	0005	0761	72	06	2	3	0	0	0	0	0	0
08	001	0004	0729	72	06	2	3	0	0	0	0	0	0
08	001	0004	0729	72	06	2	3	0	0	0	0	0	0
08	001	0004	0729	72	07	2	3	0	0	0	0	0	0
08	001	0004	0729	72	07	2	3	0	0	0	0	0	0
08	002	0007	0767	73	01	1	3	0	0	1	0	0	0
08	002	0007	0767	73	01	1	3	0	0	1	0	0	0
08	001	0005	0732	73	01	1	3	0	0	1	0	0	0
08	001	0005	0732	73	01	1	3	0	0	1	0	0	0
08	002	0006	0764	73	01	1	1	1	22	1	0	0	0
08	002	0006	0764	73	01	1	1	1	20	1	0	0	0
08	001	0005	0732	73	01	1	1	8	26	1	0	0	0
08	002	0007	0767	73	01	2	3	0	0	1	0	0	0
08	002	0007	0767	73	01	2	3	0	0	1	0	0	0
08	002	0007	0767	73	01	2	3	0	0	1	0	0	0
08	002	0007	0767	73	01	2	3	0	0	1	0	0	0
08	002	0006	0764	73	01	2	3	0	0	1	0	0	0
08	001	0005	0732	73	01	2	3	0	0	1	0	0	0
08	002	0006	0764	73	01	2	3	0	0	1	0	0	0
08	001	0005	0732	73	01	2	2	0	0	1	0	0	0
08	001	0005	0732	73	01	2	3	0	0	1	0	0	0
08	002	0006	0764	73	01	2	3	0	0	1	0	0	0
08	001	0005	0732	73	01	2	3	0	0	1	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
08	001	0005	0732	73	01	2	1	3	24	1	0	0	0
08	002	0006	0764	73	02	1	3	0	0	0	0	0	0
08	001	0005	0732	73	03	1	3	0	0	4	0	0	0
08	001	0005	0732	73	05	1	4	0	0	0	0	0	0
08	002	0007	0767	73	05	1	3	0	0	0	0	0	0
08	002	0007	0767	73	05	1	3	0	0	0	0	0	0
08	001	0005	0732	73	05	1	4	0	0	0	0	0	0
08	002	0006	0764	73	05	2	3	0	0	0	0	0	0
08	002	0006	0764	73	05	2	3	0	0	0	0	0	0
08	001	0005	0732	73	05	2	3	0	0	0	0	0	0
08	002	0006	0764	73	05	2	1	1	10	0	0	0	0
08	002	0006	0764	73	06	1	3	0	0	0	0	0	1
08	002	0006	0764	73	06	1	4	0	0	0	0	0	1
08	001	0005	0732	73	06	2	3	0	0	0	0	0	0
08	002	0007	0767	73	06	2	3	0	0	0	0	0	0
08	002	0007	0767	73	06	2	3	0	0	0	0	0	0
08	001	0005	0732	73	06	2	3	0	0	0	0	0	0
08	001	0005	0732	73	06	2	3	0	0	0	0	0	0
08	002	0007	0767	73	06	2	3	0	0	0	0	0	0
08	002	0006	0764	73	06	2	3	0	0	0	0	0	0
08	001	0005	0732	73	06	2	3	0	0	0	0	0	0
08	002	0006	0764	73	06	2	3	0	0	0	0	0	0
08	001	0005	0732	73	06	2	3	0	0	0	0	0	0
08	002	0006	0764	73	06	2	3	0	0	0	0	0	0
08	002	0007	0767	73	06	2	3	0	0	0	0	0	0
08	002	0007	0767	73	06	2	3	0	0	0	0	0	0
08	002	0007	0767	73	06	2	3	0	0	0	0	0	0
08	002	0007	0767	73	06	2	3	0	0	0	0	0	0
08	002	0006	0764	73	06	2	3	0	0	0	0	0	0
08	002	0007	0767	73	06	2	3	0	0	0	0	0	0
08	001	0005	0732	73	06	2	3	0	0	0	0	0	0
08	001	0005	0732	73	06	2	3	0	0	0	0	0	0
08	001	0005	0732	73	06	2	3	0	0	0	0	0	0
08	002	0006	0764	73	06	2	3	0	0	0	0	0	0
08	002	0006	0764	73	06	2	2	0	0	0	0	0	0
08	002	0007	0767	73	06	2	3	0	0	0	0	0	0
08	002	0007	0767	73	06	2	3	0	0	0	0	0	0
08	002	0007	0767	73	06	2	3	0	0	0	0	0	0
08	002	0007	0767	73	06	2	3	0	0	0	0	0	0
08	002	0007	0767	73	06	2	3	0	0	0	0	0	1
08	001	0005	0732	73	06	2	1	1	26	0	0	0	0
08	002	0007	0767	73	06	2	1	3	30	0	0	0	0
08	002	0006	0764	73	07	2	3	0	0	0	0	0	0
08	001	0005	0732	73	07	2	3	0	0	0	0	0	0
08	001	0005	0732	73	07	2	2	0	0	0	0	0	0
08	002	0007	0767	73	07	2	3	0	0	0	0	0	0
08	002	0007	0767	73	07	2	3	0	0	0	0	0	0
08	001	0005	0732	73	07	2	1	0	0	0	0	0	0
08	001	0005	0732	73	07	2	3	0	0	0	0	0	0
08	002	0007	0767	73	07	2	3	0	0	0	0	0	0
08	002	0007	0767	73	07	2	3	0	0	0	0	0	1
08	001	0006	0738	74	01	1	3	0	0	1	0	0	0
08	000	0000	0738	74	01	1	3	0	0	1	0	0	0
08	000	0000	0738	74	01	1	4	0	0	1	0	0	0
08	001	0006	0738	74	01	1	3	0	0	1	0	0	0
08	000	0000	0738	74	01	1	3	0	0	1	0	0	0
08	002	0008	0772	74	01	1	3	0	0	1	0	0	0
08	000	0000	0738	74	01	1	3	0	0	1	0	0	0
08	002	0008	0772	74	01	1	3	0	0	1	0	0	0
08	000	0000	0744	74	01	1	3	0	0	1	0	0	0
08	001	0006	0738	74	01	1	3	0	0	1	0	0	0
08	000	0000	0738	74	01	1	3	0	0	1	0	0	0
08	000	0000	0738	74	01	1	3	0	0	1	0	0	0
08	000	0000	0738	74	01	1	3	0	0	1	0	0	0
08	001	0006	0738	74	01	1	3	0	0	1	1	0	0
08	000	0000	0738	74	01	1	1	1	24	1	0	0	0
08	001	0006	0738	74	01	1	1	8	20	1	1	0	0
08	001	0006	0738	74	01	2	3	0	0	0	0	0	0
08	001	0006	0738	74	01	2	3	0	0	0	0	0	0
08	000	0000	0738	74	01	2	3	0	0	1	0	0	0
08	001	0006	0738	74	01	2	3	0	0	1	0	0	0
08	001	0006	0738	74	01	2	3	0	0	1	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
08	002	0008	0772	74	01	2	3	0	0	1	0	0	0
08	001	0006	0738	74	01	2	3	0	0	1	0	0	0
08	000	0000	0738	74	05	1	1	3	18	0	0	0	0
08	002	0008	0772	74	06	1	3	0	0	0	0	0	0
08	002	0008	0772	74	06	1	4	0	0	0	0	0	1
08	002	0008	0772	74	06	1	4	0	0	0	0	0	1
08	001	05-6	0744	74	06	1	3	0	0	0	0	0	1
08	001	05-6	0744	74	06	1	3	0	0	0	0	0	1
08	001	0006	0738	74	06	2	3	0	0	0	0	0	0
08	002	0008	0772	74	06	2	3	0	0	0	0	0	0
08	001	0006	0738	74	06	2	3	0	0	0	0	0	0
08	001	0006	0738	74	06	2	3	0	0	0	0	0	0
08	002	0008	0772	74	06	2	3	0	0	0	0	0	0
08	002	0008	0772	74	06	2	3	0	0	0	0	0	0
08	001	0006	0738	74	06	2	3	0	0	0	0	0	0
08	001	0006	0738	74	06	2	3	0	0	0	0	0	0
08	002	0008	0772	74	06	2	3	0	0	0	0	0	0
08	001	0006	0738	74	06	2	3	0	0	0	0	0	0
08	002	0008	0772	74	06	2	3	0	0	0	0	0	0
08	002	0008	0772	74	06	2	3	0	0	0	0	0	0
08	001	0006	0738	74	06	2	3	0	0	0	0	0	0
08	001	0006	0738	74	06	2	3	0	0	0	0	0	0
08	001	05-6	0744	74	06	2	3	0	0	0	0	0	0
08	002	0008	0772	74	06	2	3	0	0	0	0	0	0
08	001	0006	0738	74	06	2	3	0	0	0	0	0	0
08	002	0008	0772	74	06	2	3	0	0	0	0	0	0
08	002	0008	0772	74	06	2	3	0	0	0	0	0	0
08	001	0006	0738	74	06	2	1	3	22	0	0	0	0
08	001	0006	0738	74	06	2	1	3	22	0	0	0	0
08	001	0006	0738	74	06	2	1	3	22	0	0	0	0
08	001	05-6	0744	74	07	2	3	0	0	0	0	0	0
08	001	05-6	0744	74	07	2	3	0	0	0	0	0	0
08	001	0006	0738	74	07	2	3	0	0	0	0	0	0
08	002	0008	0772	74	07	2	3	0	0	0	0	0	0
08	001	0006	0738	74	07	2	3	0	0	0	0	0	0
08	001	05-6	0744	74	07	2	1	3	20	0	0	0	1
08	002	0008	0772	74	35	1	3	0	0	0	0	0	0
08			0772	74	45	2	3	0	0	1	0	0	0
08	000	0000	0785	75	01	1	3	0	0	1	0	0	0
08	000	0000	0785	75	01	1	3	0	0	1	0	0	0
08	000	0000	0785	75	01	1	3	0	0	1	0	0	0
08	000	0000	0785	75	01	1	3	0	0	1	0	0	0
08	000	0000	0740	75	01	1	3	0	0	1	0	0	0
08	000	0000	0740	75	01	1	3	0	0	1	0	0	0
08	000	0000	0785	75	01	1	3	0	0	1	0	0	0
08	000	0000	0785	75	01	1	3	0	0	1	0	0	0
08	000	0000	0785	75	01	1	3	0	0	3	0	0	0
08	000	0000	0785	75	01	1	1	1	18	1	0	0	0
08	000	0000	0785	75	01	1	1	1	20	1	0	0	0
08	000	0000	0785	75	01	2	3	0	0	1	0	0	0
08	000	0000	0785	75	02	1	3	0	0	0	0	0	0
08	000	0000	0740	75	04	1	3	0	0	7	0	0	0
08	000	0000	0740	75	05	1	3	0	0	0	0	0	0
08	000	0000	0785	75	06	1	3	0	0	0	0	0	0
08	001	0007	0740	75	06	1	3	0	0	0	0	0	1
08	001	0007	0740	75	06	1	3	0	0	0	0	0	1
08	001	0007	0740	75	06	1	3	0	0	0	0	0	1
08	000	0000	0785	75	06	1	3	0	0	0	0	0	1
08	002	0009	0785	75	06	1	3	0	0	0	0	0	1
08	002	0009	0785	75	06	1	3	0	0	0	0	0	1
08	002	0009	0785	75	06	1	3	0	0	0	0	0	1
08	002	0009	0785	75	06	1	1	1	22	0	0	0	1
08	000	0000	0785	75	06	1	1	1	26	0	0	0	1
08	002	0009	0785	75	06	2	3	0	0	0	0	0	0
08	002	0009	0785	75	06	2	3	0	0	0	0	0	0
08	001	0007	0740	75	06	2	3	0	0	0	0	0	0
08	000	0000	0740	75	06	2	3	0	0	0	0	0	0
08	002	0009	0785	75	06	2	3	0	0	0	0	0	0
08	002	0009	0785	75	06	2	3	0	0	0	0	0	0
08	002	0009	0785	75	06	2	3	0	0	0	0	0	0
08	002	0009	0785	75	06	2	3	0	0	0	0	0	0
08	002	0009	0785	75	06	2	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
08	002	0009	0785	75	06	2	3	0	0	0	0	0	0
08	002	0009	0785	75	06	2	3	0	0	0	0	0	0
08	002	0009	0785	75	06	2	3	0	0	0	0	0	0
08	002	0009	0785	75	06	2	3	0	0	0	0	0	0
08	002	0009	0785	75	06	2	3	0	0	0	0	0	0
08	002	0009	0785	75	06	2	3	0	0	0	0	0	0
08	002	0009	0785	75	06	2	3	0	0	0	0	0	0
08	001	0007	0740	75	06	2	3	0	0	0	0	0	0
08	002	0009	0785	75	06	2	3	0	0	0	0	0	0
08	002	0009	0785	75	06	2	3	0	0	0	0	0	0
08	001	0007	0740	75	06	2	3	0	0	0	0	0	0
08	002	0009	0785	75	06	2	3	0	0	0	0	0	0
08	002	0009	0785	75	06	2	3	0	0	0	0	0	0
08	002	0009	0785	75	06	2	3	0	0	0	0	0	0
08	002	0009	0785	75	06	2	3	0	0	0	0	0	0
08	002	0009	0785	75	06	2	3	0	0	0	0	0	0
08	000	0000	0740	75	06	2	3	0	0	0	0	0	0
08	002	0009	0785	75	06	2	3	0	0	0	0	0	0
08	002	0009	0785	75	06	2	3	0	0	0	0	0	0
08	000	0000	0785	75	06	2	3	0	0	0	0	0	0
08	002	0009	0785	75	06	2	3	0	0	0	0	0	0
08	002	0009	0785	75	06	2	3	0	0	0	0	0	0
08	002	0009	0785	75	06	2	1	7	24	0	0	0	0
08	001	0007	0740	75	07	1	3	0	0	0	0	0	1
08	002	0009	0785	75	07	1	3	0	0	0	0	0	1
08	001	0007	0740	75	07	1	3	0	0	0	0	0	1
08	000	0000	0740	75	07	1	1	1	16	0	0	0	1
08	000	0000	0785	75	07	2	3	0	0	0	0	0	0
08	001	0007	0740	75	07	2	2	0	0	0	0	0	0
08	000	0000	0740	75	07	2	2	0	0	0	0	0	0
08	002	0009	0785	75	07	2	3	0	0	0	0	0	0
08	001	0007	0740	75	07	2	1	1	14	0	0	0	0
08	002	0009	0785	75	08	1	1	1	20	0	0	0	1
08	002	0009	0785	75	08	1	1	1	20	0	0	0	1
08	002	0009	0785	75	08	1	1	1	20	0	0	1	1
08	002	0009	0785	75	08	1	1	1	20	0	0	0	1
08	002	0009	0785	75	08	1	1	1	20	0	0	0	1
08	000	0000	0785	75	08	2	3	0	0	0	0	0	0
08	002	0009	0785	75	11	0	1	1	26	0	0	0	0
08	000	0000	0740	75	37	2	5	0	0	0	0	0	0
08	001	0010	0753	76	01	1	4	0	0	1	0	0	0
08	001	0009	0750	76	01	1	3	0	0	1	0	0	0
08	002	0011	0791	76	01	1	3	0	0	1	0	0	0
08	002	0011	0791	76	01	1	1	1	24	1	0	0	0
08	002	0001	0787	76	01	2	3	0	0	1	0	0	0
08	002	0011	0791	76	05	1	3	0	0	0	0	0	0
08	001	0009	0750	76	05	1	3	0	0	0	0	0	0
08	002	0011	0791	76	05	2	3	0	0	0	0	0	0
08	002	0001	0787	76	05	2	3	0	0	0	0	0	0
08	002	0001	0787	76	06	1	3	0	0	0	0	0	0
08	001	0008	0747	76	06	1	3	0	0	0	0	0	0
08	001	0008	0747	76	06	1	3	0	0	0	0	0	0
08	001	0008	0747	76	06	1	3	0	0	0	0	0	1
08	001	0008	0747	76	06	1	3	0	0	0	0	0	1
08	001	0008	0747	76	06	1	3	0	0	0	0	0	1
08	002	0011	0791	76	06	1	1	1	24	0	0	0	1
08	001	0008	0747	76	06	2	3	0	0	0	0	0	0
08	001	0009	0750	76	06	2	3	0	0	0	0	0	0
08	001	0008	0747	76	06	2	3	0	0	0	0	0	0
08	001	0009	0750	76	06	2	3	0	0	0	0	0	0
08	001	0008	0747	76	06	2	4	0	0	0	0	0	0
08	001	0008	0747	76	06	2	3	0	0	0	0	0	0
08	001	0009	0750	76	06	2	3	0	0	0	0	0	0
08	001	0008	0747	76	06	2	3	0	0	0	0	0	0
08	001	0008	0747	76	06	2	3	0	0	0	0	0	0
08	001	0008	0747	76	06	2	3	0	0	0	0	0	0
08	001	0008	0747	76	06	2	3	0	0	0	0	0	0
08	002	0011	0791	76	06	2	3	0	0	0	0	0	0
08	002	0011	0791	76	06	2	3	0	0	0	0	0	0
08	002	0011	0791	76	06	2	3	0	0	0	0	0	0
08	002	0011	0791	76	06	2	3	0	0	0	0	0	0
08	002	0011	0791	76	06	2	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
08	002	0011	0791	76	06	2	3	0	0	0	0	0	0
08	002	0011	0791	76	06	2	3	0	0	0	0	0	0
08	002	0011	0791	76	06	2	3	0	0	0	0	0	0
08	002	0011	0791	76	06	2	3	0	0	0	0	0	0
08	002	0011	0791	76	06	2	3	0	0	0	0	0	0
08	002	0001	0787	76	06	2	2	0	0	0	0	0	0
08	002	0001	0787	76	06	2	3	0	0	0	0	0	0
08	002	0001	0787	76	06	2	3	0	0	0	0	0	0
08	002	0001	0787	76	06	2	3	0	0	0	0	0	0
08	002	0001	0787	76	06	2	1	1	24	0	0	0	0
08	002	0001	0787	76	06	2	1	1	26	0	0	0	0
08	001	0008	0747	76	06	2	1	3	18	0	0	0	0
08	001	0008	0747	76	07	1	1	1	26	0	0	0	1
08	001	0008	0747	76	07	2	3	0	0	0	0	0	0
08	001	0008	0747	76	07	2	3	0	0	0	0	0	0
08	002	0011	0791	76	08	1	3	0	0	0	0	0	0
08	002	0011	0791	76	11	1	1	1	18	0	0	0	1
08	002	0011	0791	76	11	2	3	0	0	0	0	0	0
08	002	0011	0791	76	21	2	3	0	0	3	0	0	0
08	002	0012	0796	77	01	1	3	0	0	1	0	0	0
08	002	0012	0796	77	01	2	3	0	0	1	0	0	0
08	002	0012	0796	77	06	1	3	0	0	0	0	0	0
08	002	0012	0796	77	06	1	3	0	0	0	0	0	0
08	002	0012	0796	77	06	1	3	0	0	0	0	0	0
08	002	0012	0796	77	06	2	3	0	0	0	0	0	0
08	002	0012	0796	77	06	2	3	0	0	0	0	0	0
08	002	0012	0796	77	06	2	3	0	0	0	0	0	0
08	002	0012	0796	77	06	2	3	0	0	0	0	0	0
08	002	0012	0796	77	06	2	3	0	0	0	0	0	0
08	002	0012	0796	77	07	2	2	0	0	0	0	0	0
08	002	0014	0799	78	01	2	3	0	0	1	0	0	0
08	002	0014	0799	78	05	1	3	0	0	0	0	0	0
08	002	0014	2702	78	06	1	3	0	0	0	0	0	0
08	002	0014	0799	78	06	1	3	0	0	0	0	0	1
08	002	0014	0799	78	06	1	3	0	0	0	0	0	1
08	002	0014	0799	78	06	2	3	0	0	0	0	0	0
08	002	0014	0799	78	06	2	3	0	0	0	0	0	0
08	002	0014	0799	78	06	2	3	0	0	0	0	0	0
08	002	0014	2702	78	06	2	3	0	0	0	0	0	0
08	002	0014	2702	78	06	2	1	1	22	0	0	0	0
08	002	0014	2702	78	07	2	3	0	0	0	0	0	0
08	002	0014	0799	78	35	2	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
08A	002	0011	1055	101	01	1	3	0	0	0	0	0	0
08A	002	0008	1033	101	01	1	3	0	0	1	0	0	0
08A	002	0007	1029	101	01	1	3	0	0	1	1	0	0
08A	002	0011	1055	101	01	1	1	1	24	1	0	0	0
08A	002	0009	1036	101	01	1	1	1	18	1	0	0	0
08A	001	0008	1019	101	01	2	2	0	0	1	0	0	0
08A	002	0001	1023	101	01	2	3	0	0	1	0	0	0
08A	001	0008	1019	101	01	2	2	0	0	1	0	0	0
08A	001	0003	1005	101	01	2	3	0	0	1	0	0	0
08A	002	0007	1029	101	03	1	3	0	0	4	0	0	0
08A	002	0006	1026	101	05	1	3	0	0	0	0	0	0
08A	002	0006	1026	101	05	1	3	0	0	0	0	0	0
08A	001	0001	1003	101	05	1	3	0	0	0	0	0	0
08A	002	0001	1023	101	05	1	3	0	0	0	0	0	0
08A	001	0006	1013	101	05	1	1	1	22	0	0	0	0
08A	001	0003	1005	101	05	2	1	1	12	0	0	0	0
08A	001	0001	1003	101	06	1	3	0	0	0	0	0	0
08A	002	0001	1023	101	06	1	4	0	0	0	0	0	0
08A	002	0001	1023	101	06	1	4	0	0	0	0	0	0
08A	002	0011	1055	101	06	1	3	0	0	0	0	0	1
08A	001	0003	1005	101	06	1	3	0	0	0	0	0	1
08A	001	0001	1003	101	06	1	3	0	0	0	0	0	1
08A	002	0009	1036	101	06	1	3	0	0	0	0	0	1

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
08A	001	0001	1003	101	06	1	3	0	0	0	0	0	1
08A	002	0008	1033	101	06	1	3	0	0	0	0	0	1
08A	001	0006	1013	101	06	1	3	0	0	0	0	0	1
08A	001	0003	1005	101	06	1	3	0	0	0	0	0	1
08A	001	0001	1003	101	06	1	3	0	0	0	0	0	1
08A	001	0003	1005	101	06	1	1	1	12	0	0	0	1
08A	001	0001	1003	101	06	2	2	0	0	0	0	0	0
08A	001	0004	1008	101	06	2	3	0	0	0	0	0	0
08A	002	0008	1033	101	06	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	06	2	3	0	0	0	0	0	0
08A	002	0001	1023	101	06	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	06	2	3	0	0	0	0	0	0
08A	002	0008	1033	101	06	2	3	0	0	0	0	0	0
08A	002	0008	1033	101	06	2	3	0	0	0	0	0	0
08A	002	0008	1033	101	06	2	2	0	0	0	0	0	0
08A	002	0008	1033	101	06	2	3	0	0	0	0	0	0
08A	002	0008	1033	101	06	2	3	0	0	0	0	0	0
08A	002	0010	1053	101	06	2	3	0	0	0	0	0	0
08A	002	0008	1033	101	06	2	3	0	0	0	0	0	0
08A	001	0005	1011	101	06	2	3	0	0	0	0	0	0
08A	002	0008	1033	101	06	2	3	0	0	0	0	0	0
08A	001	0008	1019	101	06	2	2	0	0	0	0	0	0
08A	002	0007	1029	101	06	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	06	2	3	0	0	0	0	0	0
08A	001	0008	1019	101	06	2	3	0	0	0	0	0	0
08A	002	0001	1023	101	06	2	3	0	0	0	0	0	1
08A	002	0011	1055	101	06	2	1	1	24	0	0	0	0
08A	002	0008	1033	101	06	4	1	4	12	0	0	0	0
08A	001	0005	1011	101	07	1	3	0	0	0	0	0	1
08A	002	0008	1033	101	07	2	3	0	0	0	0	0	0
08A	001	0007	1016	101	07	2	3	0	0	0	0	0	0
08A	002	0001	1023	101	07	2	3	0	0	0	0	0	1
08A	002	0008	1033	101	08	2	3	0	0	0	0	0	0
08A	002	0008	1033	101	08	2	3	0	0	0	0	0	0
08A	000	0000	1003	101	09	2	3	0	0	0	0	0	0
08A	000	0000	1003	101	13	1	3	0	0	7	0	0	0
08A	000	0000	1003	101	13	1	1	1	20	7	5	0	0
08A	002	0007	1029	101	34	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	34	2	2	0	0	1	0	0	0
08A	000	0000	1003	101	34	2	3	0	0	1	0	0	0
08A	000	0000	1003	101	34	2	3	0	0	1	0	0	0
08A	000	0000	1003	101	34	2	3	0	0	1	0	0	0
08A	002	0002	1038	101	34	2	3	0	0	1	0	0	0
08A	000	0000	1003	101	34	2	3	0	0	1	0	0	0
08A	001	0001	1003	101	34	2	3	0	0	1	0	0	0
08A	000	0000	1003	101	34	2	3	0	0	1	0	0	0
08A	000	0000	1003	101	34	2	3	0	0	1	0	0	0
08A	000	0000	1003	101	34	2	3	0	0	1	0	0	0
08A	000	0000	1003	101	34	2	3	0	0	1	0	0	0
08A	001	0001	1003	101	34	2	2	0	0	1	0	0	0
08A	000	0000	1003	101	34	2	3	0	0	1	0	0	0
08A	001	0001	1003	101	34	2	3	0	0	1	0	0	0
08A	000	0000	1003	101	34	2	3	0	0	1	0	0	0
08A	001	0003	1005	101	34	2	3	0	0	2	0	0	0
08A	002	0001	1023	101	34	2	3	0	0	3	0	0	0
08A	002	0001	1023	101	34	2	3	0	0	3	0	0	0
08A	002	0001	1023	101	34	2	3	0	0	3	0	0	0
08A	002	0010	1053	101	34	2	2	0	0	3	0	0	0
08A	002	0001	1023	101	34	2	3	0	0	3	0	0	0
08A	002	0001	1023	101	34	2	3	0	0	3	0	0	0
08A	002	0007	1029	101	34	2	3	0	0	3	0	0	0
08A	002	0001	1023	101	34	2	3	0	0	3	0	0	0
08A	002	0001	1023	101	34	2	3	0	0	3	0	0	0
08A	002	0001	1023	101	34	2	3	0	0	3	0	0	0
08A	002	0001	1023	101	34	2	2	0	0	3	0	0	0
08A	002	0010	1053	101	34	2	2	0	0	3	0	0	0
08A	002	0007	1029	101	34	2	3	0	0	3	0	0	0
08A	002	0001	1023	101	34	2	2	0	0	3	0	0	0
08A	002	0001	1023	101	34	2	3	0	0	3	0	0	0
08A	002	0001	1023	101	34	2	3	0	0	3	0	0	0
08A	002	0001	1023	101	34	2	3	0	0	3	0	0	0
08A	002	0001	1023	101	34	2	3	0	0	3	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
08A	002	0001	1023	101	34	2	2	0	0	3	0	0	0
08A	002	0001	1023	101	34	2	3	0	0	3	0	0	0
08A	002	0001	1023	101	34	2	3	0	0	3	0	0	0
08A	002	0001	1023	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	000	0000	1003	101	36	2	3	0	0	0	0	0	0
08A	002	0001	1023	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	001	0004	1008	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	002	0001	1023	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	4	0	0	0	0	0	0
08A	002	0009	1036	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	4	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	000	0000	1003	101	36	2	3	0	0	0	0	0	0
08A	002	0007	1029	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	002	0009	1036	101	36	2	3	0	0	0	0	0	0
08A	002	0001	1023	101	36	2	3	0	0	0	0	0	0
08A	002	0009	1036	101	36	2	3	0	0	0	0	0	0
08A	002	0001	1023	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	002	0001	1023	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	000	0000	1003	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	002	0006	1026	101	36	2	3	0	0	0	0	0	0
08A	000	0000	1003	101	36	2	3	0	0	0	0	0	0
08A	002	0008	1033	101	36	2	3	0	0	0	0	0	0
08A	000	0000	1003	101	36	2	3	0	0	0	0	0	0
08A	002	0008	1033	101	36	2	3	0	0	0	0	0	0
08A	000	0000	1003	101	36	2	3	0	0	0	0	0	0
08A	002	0009	1036	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	4	0	0	0	0	0	0
08A	002	0009	1036	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	4	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	002	0008	1033	101	36	2	3	0	0	0	0	0	0
08A	000	0000	1003	101	36	2	3	0	0	0	0	0	0
08A	002	0001	1023	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	002	0001	1023	101	36	2	3	0	0	0	0	0	0
08A	002	0001	1023	101	36	2	3	0	0	0	0	0	0
08A	002	0001	1023	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	002	0001	1023	101	36	2	3	0	0	0	0	0	0
08A	002	0001	1023	101	36	2	3	0	0	0	0	0	0
08A	002	0001	1023	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	002	0001	1023	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	002	0001	1023	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	001	0005	1011	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	002	0001	1023	101	36	2	3	0	0	0	0	0	0
08A	000	0000	1003	101	36	2	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
08A	002	0001	1023	101	36	2	3	0	0	0	0	0	0
08A	002	0001	1023	101	36	2	3	0	0	0	0	0	0
08A	002	0001	1023	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	002	0001	1023	101	36	2	3	0	0	0	0	0	0
08A	002	0001	1023	101	36	2	3	0	0	0	0	0	0
08A	002	0001	1023	101	36	2	3	0	0	0	0	0	0
08A	002	0001	1023	101	36	2	3	0	0	0	0	0	0
08A	002	0001	1023	101	36	2	3	0	0	0	0	0	0
08A	002	0001	1023	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	002	0001	1023	101	36	2	3	0	0	0	0	0	0
08A	001	0001	1003	101	36	2	3	0	0	0	0	0	0
08A	000	0000	1043	102	01	1	3	0	0	1	0	0	0
08A	002	04-5	1040	102	01	1	3	0	0	1	0	0	0
08A	002	04-5	1040	102	01	1	3	0	0	1	0	0	0
08A	000	0000	1043	102	01	1	3	0	0	1	0	0	0
08A	002	04-5	1040	102	01	1	3	0	0	1	0	0	0
08A	002	04-5	1040	102	01	1	1	1	12	1	0	0	0
08A	002	04-5	1040	102	01	1	1	1	14	1	0	0	0
08A	002	04-5	1040	102	01	2	3	0	0	1	0	0	0
08A	000	0000	1043	102	03	1	3	0	0	4	0	0	0
08A	000	0000	1043	102	03	1	1	1	14	4	0	0	0
08A	002	04-5	1040	102	05	2	3	0	0	0	0	0	0
08A	002	04-5	1040	102	06	2	3	0	0	0	0	0	0
08A	002	04-5	1040	102	06	2	3	0	0	0	0	0	0
08A	002	04-5	1040	102	06	2	3	0	0	0	0	0	0
08A	002	04-5	1040	102	06	2	3	0	0	0	0	0	0
08A	002	04-5	1040	102	06	2	3	0	0	0	0	0	0
08A	002	04-5	1040	102	06	2	3	0	0	0	0	0	0
08A	002	04-5	1040	102	06	2	3	0	0	0	0	0	0
08A	002	0006	1043	102	06	2	3	0	0	0	0	0	0
08A	002	04-5	1040	102	06	2	3	0	0	0	0	0	0
08A	002	04-5	1040	102	06	2	2	0	0	0	0	0	0
08A	002	0006	1043	102	06	2	3	0	0	0	0	0	0
08A	002	0006	1043	102	06	2	3	0	0	0	0	0	0
08A	002	0006	1043	102	06	2	3	0	0	0	0	0	0
08A	002	04-5	1040	102	06	2	4	0	0	0	0	0	1
08A	002	04-5	1040	102	06	2	4	0	0	0	0	0	1
08A	002	04-5	1040	102	06	2	4	0	0	0	0	0	1
08A	000	0000	1043	102	07	2	3	0	0	0	0	0	0
08A	002	04-5	1040	102	07	2	3	0	0	0	0	0	0
08A	000	0000	1043	102	07	2	3	0	0	0	0	0	0
08A	002	04-5	1040	102	34	2	3	0	0	0	0	0	0
08A	002	04-5	1040	102	36	2	3	0	0	0	0	0	0
08A	002	04-5	1040	102	36	2	3	0	0	0	0	0	0
08A	002	0007	1047	103	06	1	3	0	0	0	0	0	0
08A	002	0007	1047	103	06	1	3	0	0	0	0	0	0
08A	002	0010	1050	103	06	2	3	0	0	0	0	0	0
08A	002	0007	1047	103	06	2	3	0	0	0	0	0	0
08A	002	0007	1047	103	06	2	3	0	0	0	0	0	1
08A	002	0007	1047	103	06	2	1	7	24	0	0	0	0
08A	002	0010	1050	103	07	1	3	0	0	0	0	0	1
08A	002	0007	1047	103	07	2	2	0	0	0	0	0	0
08A	002	0007	1047	103	07	2	2	0	0	0	0	0	0
08A	002	0007	1047	103	35	2	3	0	0	0	0	0	0
08A	002	0007	1047	103	36	2	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
09	002	0003	0314	31	01	1	3	0	0	0	0	0	0
09	002	0002	0312	31	01	1	3	0	0	0	0	0	0
09	001	0002	0349	31	01	1	3	0	0	1	0	0	0
09	001	0002	0349	31	01	1	3	0	0	1	0	0	0
09	003	0002	0309	31	01	1	3	0	0	1	0	0	0
09	003	0000	0302	31	05	1	3	0	0	0	0	0	0
09	001	0002	0349	31	05	1	3	0	0	0	0	0	0
09	002	0002	0312	31	05	1	3	0	0	0	0	0	0
09	002	0003	0314	31	05	1	3	0	0	0	0	0	0
09	002	0002	0312	31	05	1	3	0	0	0	0	0	0
09	002	0002	0312	31	05	1	3	0	0	0	0	0	0
09	001	0002	0349	31	05	1	3	0	0	0	0	0	0
09	001	0002	0349	31	05	2	3	0	0	0	0	0	0
09	001	0002	0349	31	05	2	3	0	0	0	0	0	0
09	003	0004	0320	31	05	2	3	0	0	0	0	0	0
09	001	0001	0348	31	06	1	3	0	0	0	0	0	0
09	002	0003	0314	31	06	1	3	0	0	0	0	0	0
09	001	0002	0349	31	06	1	3	0	0	0	0	0	1
09	003	0000	0302	31	06	1	3	0	0	0	0	0	1
09	003	0002	0309	31	06	2	3	0	0	0	0	0	0
09	003	0002	0309	31	06	2	3	0	0	0	0	0	0
09	003	0000	0302	31	06	2	3	0	0	0	0	0	0
09	002	0002	0312	31	06	2	3	0	0	0	0	0	0
09	003	0002	0309	31	06	2	3	0	0	0	0	0	0
09	002	0002	0312	31	06	2	3	0	0	0	0	0	0
09	003	0000	0302	31	06	2	3	0	0	0	0	0	0
09	002	0003	0314	31	06	2	3	0	0	0	0	0	0
09	002	0003	0314	31	06	2	3	0	0	0	0	0	0
09	002	0002	0312	31	06	2	3	0	0	0	0	0	0
09	002	0003	0314	31	06	2	3	0	0	0	0	0	0
09	003	0002	0309	31	06	2	3	0	0	0	0	0	0
09	001	0002	0349	31	06	2	3	0	0	0	0	0	0
09	001	0002	0349	31	06	2	3	0	0	0	0	0	0
09	003	0004	0320	31	06	2	3	0	0	0	0	0	0
09	003	0004	0320	31	06	2	3	0	0	0	0	0	0
09	001	0002	0349	31	06	2	3	0	0	0	0	0	0
09	001	0002	0349	31	06	2	3	0	0	0	0	0	0
09	001	0002	0349	31	06	2	3	0	0	0	0	0	0
09	001	0002	0349	31	06	2	3	0	0	0	0	0	0
09	001	0002	0349	31	06	2	3	0	0	0	0	0	0
09	003	0004	0320	31	06	2	3	0	0	0	0	0	0
09	003	0004	0320	31	06	2	3	0	0	0	0	0	0
09	003	0004	0320	31	06	2	3	0	0	0	0	0	0
09	001	0002	0349	31	06	2	3	0	0	0	0	0	0
09	001	0002	0349	31	06	2	3	0	0	0	0	0	0
09	001	0002	0349	31	06	2	3	0	0	0	0	0	0
09	003	0004	0320	31	06	2	3	0	0	0	0	0	0
09	002	0000	0303	31	06	2	1	1	20	0	0	0	0
09	001	0002	0349	31	06	2	1	3	26	0	0	0	0
09	001	0002	0349	31	06	2	1	3	26	0	0	0	0
09	003	0002	0309	31	07	2	3	0	0	0	0	0	0
09	002	0002	0312	31	07	2	3	0	0	0	0	0	0
09	002	0002	0312	31	07	2	3	0	0	0	0	0	0
09	003	0004	0320	31	07	2	2	0	0	0	0	0	0
09	002	0000	0303	31	07	2	3	0	0	0	0	0	0
09	001	0002	0349	31	07	2	1	7	28	0	0	0	0
09	002	0002	0312	31	08	2	2	0	0	0	0	0	0
09	003	0004	0320	31	30	2	3	0	0	0	0	0	0
09	000	0000	0320	32	01	1	3	0	0	1	0	0	0
09	002	0003	0317	32	01	1	3	0	0	1	0	0	0
09	002	0003	0317	32	01	1	3	0	0	1	0	0	0
09	002	0003	0317	32	01	1	3	0	0	1	0	0	0
09	002	0003	0317	32	01	1	3	0	0	1	0	0	0
09	002	0003	0317	32	01	1	3	0	0	1	0	0	0
09	003	0004	0332	32	01	1	3	0	0	1	0	0	0
09	003	0004	0332	32	01	1	3	0	0	1	0	0	0
09	003	0004	0332	32	01	1	3	0	0	1	0	0	0
09	003	0004	0332	32	01	1	3	0	0	1	0	0	0
09	003	0004	0332	32	01	1	3	0	0	1	0	0	0
09	003	0004	0332	32	01	1	3	0	0	1	0	0	0
09	003	0004	0332	32	01	1	3	0	0	1	0	0	0
09	003	0004	0332	32	01	1	1	1	18	1	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
09	002	0003	0317	32	01	1	1	1	18	1	0	0	0
09	003	0003	0328	32	01	1	1	1	22	1	0	0	0
09	000	0000	0320	32	01	2	3	0	0	1	0	0	0
09	000	0000	0320	32	01	2	3	0	0	1	0	0	0
09	003	0004	0332	32	05	1	3	0	0	0	0	0	0
09	003	0004	0332	32	05	1	3	0	0	0	0	0	0
09	002	0003	0317	32	05	2	3	0	0	0	0	0	0
09	002	0003	0317	32	05	2	3	0	0	0	0	0	0
09	003	0004	0332	32	06	1	3	0	0	0	0	0	0
09	003	0004	0332	32	06	1	3	0	0	0	0	0	1
09	003	0004	0332	32	06	1	3	0	0	0	0	0	1
09	003	0004	0332	32	06	1	3	0	0	0	0	0	1
09	003	0003	0328	32	06	1	3	0	0	0	0	0	1
09	002	0003	0317	32	06	2	3	0	0	0	0	0	0
09	002	0003	0317	32	06	2	3	0	0	0	0	0	0
09	002	0003	0317	32	06	2	3	0	0	0	0	0	0
09	002	0003	0317	32	06	2	3	0	0	0	0	0	0
09	002	0003	0317	32	06	2	2	0	0	0	0	0	0
09	003	0004	0332	32	06	2	3	0	0	0	0	0	0
09	003	0004	0332	32	06	2	3	0	0	0	0	0	0
09	002	0003	0317	32	06	2	3	0	0	0	0	0	0
09	003	0004	0332	32	06	2	3	0	0	0	0	0	0
09	002	0003	0317	32	06	2	3	0	0	0	0	0	0
09	003	0004	0332	32	06	2	3	0	0	0	0	0	0
09	002	0003	0317	32	06	2	3	0	0	0	0	0	0
09	003	0004	0332	32	06	2	3	0	0	0	0	0	0
09	002	0003	0317	32	06	2	3	0	0	0	0	0	0
09	003	0004	0332	32	06	2	2	0	0	0	0	0	0
09	003	0003	0328	32	06	2	2	0	0	0	0	0	0
09	003	0004	0332	32	06	2	3	0	0	0	0	0	0
09	003	0004	0332	32	06	2	3	0	0	0	0	0	0
09	003	0004	0332	32	06	2	3	0	0	0	0	0	0
09	002	0003	0317	32	06	2	3	0	0	0	0	0	0
09	002	0003	0317	32	06	2	3	0	0	0	0	0	0
09	003	0003	0328	32	06	2	3	0	0	0	0	0	0
09	002	0003	0317	32	06	2	3	0	0	0	0	0	0
09	002	0003	0317	32	06	2	3	0	0	0	0	0	0
09	002	0003	0317	32	06	2	3	0	0	0	0	0	0
09	003	0003	0328	32	07	2	3	0	0	0	0	0	0
09	003	0003	0328	32	07	2	3	0	0	0	0	0	0
09	003	0004	0332	32	07	2	2	0	0	0	0	0	0
09	003	0004	0332	32	07	2	3	0	0	0	0	0	0
09	003	0004	0332	32	07	2	3	0	0	0	0	0	0
09	003	0004	0332	32	07	2	3	0	0	0	0	0	0
09	003	0004	0332	32	07	2	3	0	0	0	0	0	0
09	000	0000	0320	32	12	1	3	0	0	4	0	0	0
09	000	0000	0320	32	44	1	1	2	18	0	0	0	1
09	003	0005	0341	33	01	1	3	0	0	1	0	0	0
09	003	0005	0341	33	01	1	3	0	0	1	0	0	0
09	003	0005	0341	33	01	1	3	0	0	1	0	0	0
09	003	0005	0341	33	01	1	1	1	16	1	0	0	0
09	003	0005	0341	33	01	1	1	1	18	1	0	0	0
09	003	0005	0341	33	01	2	3	0	0	1	0	0	0
09	003	0005	0341	33	02	0	3	0	0	0	0	0	0
09	003	0005	0341	33	05	1	3	0	0	0	0	0	0
09	003	0005	0341	33	05	1	3	0	0	1	0	0	0
09	003	0005	0341	33	05	1	3	0	0	1	0	0	0
09	003	0005	0341	33	05	2	3	0	0	0	0	0	0
09	003	0005	0341	33	05	2	3	0	0	0	0	0	0
09	003	0005	0341	33	06	2	3	0	0	0	0	0	0
09	003	0005	0341	33	06	2	3	0	0	0	0	0	0
09	003	0005	0341	33	06	2	3	0	0	0	0	0	0
09	003	0005	0341	33	06	2	3	0	0	0	0	0	0
09	003	0005	0341	33	06	2	3	0	0	0	0	0	0
09	003	0005	0341	33	06	2	3	0	0	0	0	0	0
09	003	0005	0341	33	06	2	3	0	0	0	0	0	0
09	003	0005	0341	33	06	2	3	0	0	0	0	0	0
09	003	0005	0341	33	06	2	3	0	0	0	0	0	0
09	003	0005	0341	33	06	2	3	0	0	0	0	0	0
09	003	0005	0341	33	06	2	3	0	0	0	0	0	0
09	003	0005	0341	33	06	2	3	0	0	0	0	0	0
09	003	0005	0341	33	06	2	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_FL
09	003	0005	0341	33	06	2	3	0	0	0	0	0	0
09	003	0005	0341	33	06	2	3	0	0	0	0	0	0
09	003	0005	0341	33	06	2	1	2	0	0	0	0	0
09	003	0005	0341	33	06	2	1	2	0	0	0	0	0
09	003	0005	0341	33	19	1	1	1	18	3	0	0	0
09	003	0006	0353	34	01	1	3	0	0	1	0	0	0
09	003	0006	0353	34	01	1	1	0	0	1	0	0	0
09	003	0006	0353	34	01	1	3	0	0	1	0	0	0
09	003	0006	0353	34	01	1	3	0	0	1	0	0	0
09	003	0006	0353	34	01	1	3	0	0	1	0	0	0
09	003	0006	0353	34	01	1	3	0	0	1	0	0	0
09	003	0006	0353	34	01	1	3	0	0	1	0	0	0
09	003	0006	0353	34	01	1	3	0	0	1	0	0	0
09	003	0006	0353	34	01	1	3	0	0	1	0	0	0
09	003	0006	0353	34	01	1	1	0	0	1	0	0	0
09	003	0006	0353	34	01	1	1	1	0	1	0	0	0
09	003	0006	0353	34	01	1	1	1	24	1	0	0	0
09	003	0006	0353	34	01	1	1	1	20	1	0	0	0
09	003	0006	0353	34	01	1	1	1	20	1	0	0	0
09	003	0006	0353	34	05	1	3	0	0	0	0	0	0
09	003	0006	0353	34	05	1	3	0	0	0	0	0	0
09	003	0006	0353	34	05	2	3	0	0	0	0	0	0
09	003	0006	0353	34	06	2	3	0	0	0	0	0	0
09	003	0006	0353	34	06	2	3	0	0	0	0	0	0
09	003	0006	0353	34	06	2	3	0	0	0	0	0	0
09	003	0006	0353	34	06	2	3	0	0	0	0	0	0
09	003	0006	0353	34	06	2	3	0	0	0	0	0	0
09	003	0006	0353	34	06	2	3	0	0	0	0	0	0
09	003	0006	0353	34	06	2	3	0	0	0	0	0	0
09	003	0006	0353	34	06	2	3	0	0	0	0	0	0
09	003	0006	0353	34	06	2	3	0	0	0	0	0	0
09	003	0006	0353	34	06	2	3	0	0	0	0	0	0
09	003	0006	0353	34	06	2	3	0	0	0	0	0	0
09	003	0006	0353	34	06	2	3	0	0	0	0	0	1
09	003	0006	0353	34	06	2	1	3	22	0	0	0	0
09	003	0006	0353	34	07	1	1	5	24	0	0	0	1
09	003	0006	0353	34	18	2	3	0	0	3	0	0	0
09	003	0006	0353	34	18	2	3	0	0	3	0	0	0
09			0353	34	26	1	1	5	26	0	0	0	1
09	003	0006	0353	34	29	2	3	0	0	0	0	0	0
09	002	0004	0324	35	01	1	3	0	0	1	0	0	0
09	002	0004	0324	35	01	1	3	0	0	1	0	0	0
09	002	0004	0324	35	01	1	3	0	0	1	0	0	0
09	000	0000	0324	35	01	1	3	0	0	1	0	0	0
09	000	0000	0324	35	01	1	3	0	0	1	0	0	0
09	002	0004	0324	35	01	1	3	0	0	1	0	0	0
09	000	0000	0324	35	01	1	3	0	0	1	0	0	0
09	002	0004	0324	35	01	1	3	0	0	1	0	0	0
09	000	0000	0324	35	01	2	3	0	0	1	0	0	0
09	002	0004	0324	35	05	0	3	0	0	0	0	0	0
09	000	0000	0324	35	05	2	3	0	0	0	0	0	0
09	002	0004	0324	35	05	2	3	0	0	0	0	0	0
09	002	0004	0324	35	05	2	3	0	0	0	0	0	0
09	002	0004	0324	35	06	2	3	0	0	0	0	0	0
09	002	0004	0324	35	06	2	3	0	0	0	0	0	0
09	002	0004	0324	35	06	2	3	0	0	0	0	0	0
09	000	0000	0324	35	06	2	3	0	0	0	0	0	0
09	002	0004	0324	35	06	2	3	0	0	0	0	0	0
09	002	0004	0324	35	06	2	3	0	0	0	0	0	0
09	002	0004	0324	35	06	2	3	0	0	0	0	0	0
09	002	0004	0324	35	06	2	3	0	0	0	0	0	0
09	002	0004	0324	35	06	2	3	0	0	0	0	0	0
09	002	0004	0324	35	06	2	3	0	0	0	0	0	0
09	002	0004	0324	35	06	2	3	0	0	0	0	0	0
09	002	0004	0324	35	06	2	3	0	0	0	0	0	0
09	002	0004	0324	35	06	2	3	0	0	0	0	0	0
09	002	0004	0324	35	06	2	3	0	0	0	0	0	0
09	002	0004	0324	35	06	2	3	0	0	0	0	0	0
09	002	0004	0324	35	07	2	3	0	0	0	0	0	0
09	002	0004	0324	35	29	2	3	0	0	0	0	0	0
09	003	0008	0386	36	01	1	3	0	0	0	0	0	0
09	000	0000	0336	36	01	1	3	0	0	1	0	0	0

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
09	000	0000	0336	36	01	1	3	0	0	1	0	0	0
09	002	0005	0336	36	01	1	0	0	0	1	0	0	0
09	003	0008	0386	36	01	1	3	0	0	1	0	0	0
09	003	0008	0386	36	01	1	3	0	0	1	0	0	0
09	000	0000	0336	36	01	2	3	0	0	1	0	0	0
09	000	0000	0336	36	01	2	3	0	0	1	0	0	0
09	003	0008	0386	36	01	2	3	0	0	1	0	0	0
09	000	0000	0336	36	01	2	3	0	0	1	0	0	0
09	003	0008	0386	36	02	1	3	0	0	0	0	0	0
09	002	0005	0336	36	05	1	1	2	26	0	0	0	0
09	002	0005	0336	36	05	2	0	0	0	0	0	0	0
09	002	0005	0336	36	05	2	3	0	0	0	0	0	0
09	003	0008	0386	36	06	1	3	0	0	0	0	0	1
09	003	0008	0386	36	06	1	3	0	0	0	0	0	1
09	003	0008	0386	36	06	1	1	2	26	0	0	0	1
09	002	0005	0336	36	06	2	3	0	0	0	0	0	0
09	000	0000	0336	36	06	2	3	0	0	0	0	0	0
09	003	0008	0386	36	06	2	3	0	0	0	0	0	0
09	002	0005	0336	36	06	2	3	0	0	0	0	0	0
09	003	0008	0386	36	06	2	3	0	0	0	0	0	0
09	002	0005	0336	36	06	2	3	0	0	0	0	0	0
09	002	0005	0336	36	06	2	3	0	0	0	0	0	0
09	002	0005	0336	36	06	2	3	0	0	0	0	0	0
09	002	0005	0336	36	06	2	1	1	28	0	0	0	0
09	002	0005	0336	36	06	2	1	3	0	0	0	0	0
09	000	0000	0336	36	06	2	1	7	22	0	0	0	0
09	002	0005	0336	36	07	2	4	0	0	0	0	0	0
09	003	0008	0386	36	07	2	3	0	0	0	0	0	0
09	002	0005	0336	36	07	2	3	0	0	0	0	0	0
09	003	0008	0386	36	07	2	3	0	0	0	0	0	0
09	002	0005	0336	36	07	2	2	0	0	0	0	0	0
09	002	0005	0336	36	07	2	3	0	0	0	0	0	0
09	002	0005	0336	36	07	2	3	0	0	0	0	0	0
09	002	0005	0336	36	07	2	3	0	0	0	0	0	0
09	002	0005	0336	36	07	2	1	7	20	0	0	0	0
09	002	0005	0336	36	07	2	1	7	20	0	0	0	0
09	002	0005	0336	36	07	2	1	7	20	0	0	0	0
09	003	0008	0386	36	17	2	3	0	0	3	0	0	0
09	003	0008	0386	36	29	2	3	0	0	0	0	0	0
09	000	0000	0336	36	35	2	3	0	0	0	0	0	0
09	002	0005	0336	36	47	1	1	9	26	4	5	0	0
09	000	0000	0391	37	01	1	3	0	0	1	0	0	0
09	002	0006	0345	37	01	1	3	0	0	1	0	0	0
09	002	0006	0345	37	01	1	3	0	0	1	0	0	0
09	000	0000	0391	37	01	1	3	0	0	1	0	0	0
09	002	0006	0345	37	01	1	1	1	20	1	0	0	0
09	002	0006	0345	37	01	1	1	1	18	1	0	0	0
09	002	0006	0345	37	01	2	3	0	0	1	0	0	0
09	000	0000	0391	37	01	2	3	0	0	1	0	0	0
09	002	0006	0345	37	06	1	3	0	0	0	0	0	0
09	002	0006	0345	37	06	1	3	0	0	0	0	0	0
09	002	0006	0345	37	06	2	3	0	0	0	0	0	0
09	002	0006	0345	37	06	2	3	0	0	0	0	0	0
09	002	0006	0345	37	06	2	3	0	0	0	0	0	0
09	002	0006	0345	37	06	2	3	0	0	0	0	0	0
09	002	0006	0345	37	06	2	3	0	0	0	0	0	0
09	002	0006	0345	37	06	2	3	0	0	0	0	0	0
09	002	0006	0345	37	06	2	3	0	0	0	0	0	0
09	002	0006	0345	37	06	2	3	0	0	0	0	0	0
09	000	0000	0391	37	06	2	3	0	0	0	0	0	0
09	000	0000	0391	37	06	2	3	0	0	0	0	0	0
09	000	0000	0391	37	06	2	3	0	0	0	0	0	0
09	002	0006	0345	37	06	2	3	0	0	0	0	0	0
09	000	0000	0391	37	06	2	3	0	0	0	0	0	0
09	000	0000	0391	37	06	2	3	0	0	0	0	0	0
09	000	0000	0391	37	06	2	3	0	0	0	0	0	0
09	002	0006	0345	37	06	2	3	0	0	0	0	0	0
09	000	0000	0391	37	06	2	3	0	0	0	0	0	0
09	002	0006	0345	37	06	2	3	0	0	0	0	0	0
09	000	0000	0391	37	06	2	3	0	0	0	0	0	0
09	002	0006	0345	37	07	2	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
09	002	0006	0345	37	07	2	3	0	0	0	0	0	0
09	002	0006	0345	37	08	2	3	0	0	0	0	0	0
09	000	0000	0357	38	01	1	3	0	0	0	0	0	0
09	000	0000	0357	38	01	1	3	0	0	0	0	0	0
09	000	0000	0357	38	01	1	1	1	18	0	0	0	0
09	002	0007	0357	38	06	2	3	0	0	0	0	0	0
09	000	0000	0357	38	06	2	3	0	24	0	0	0	0
09	002	0007	0357	38	06	2	3	0	0	0	0	0	0
09	002	0007	0357	38	06	2	3	0	0	0	0	0	0
09	002	0007	0357	38	07	2	3	0	0	0	0	0	0
09	002	0007	0357	38	07	2	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
10	002	0006	0843	81	01	1	3	0	0	0	0	0	0
10	002	0005	0838	81	01	1	3	0	0	0	0	0	0
10	000	0000	0838	81	01	1	3	0	0	0	0	0	0
10	002	0005	0838	81	01	1	3	0	0	0	0	0	0
10	000	0000	0838	81	01	1	3	0	0	0	0	0	0
10	001	0001	0804	81	01	1	3	0	0	1	0	0	0
10	001	0001	0804	81	01	1	3	0	0	1	0	0	0
10	001	0003	0810	81	01	1	3	0	0	1	0	0	0
10	001	0001	0804	81	01	1	3	0	0	1	0	0	0
10	001	0003	0810	81	01	1	3	0	0	1	0	0	0
10	001	0001	0804	81	01	1	3	0	0	1	0	0	0
10	001	0001	0804	81	01	1	3	0	0	1	0	0	0
10	001	0002	0806	81	01	1	3	0	0	1	0	0	0
10	001	0001	0804	81	01	1	3	0	0	1	0	0	0
10	001	0001	0804	81	01	1	3	0	0	1	0	0	0
10	001	0003	0810	81	01	1	3	0	0	1	0	0	0
10	001	0004	0813	81	01	1	3	0	0	1	0	0	0
10	002	0007	0847	81	01	1	3	0	0	1	0	0	0
10	000	0000	0822	81	01	1	3	0	0	1	0	0	0
10	000	0000	0830	81	01	1	3	0	0	1	0	0	0
10	000	0000	0822	81	01	1	3	0	0	1	0	0	0
10	000	0000	0843	81	01	1	3	0	0	1	0	0	0
10	002	0007	0847	81	01	1	3	0	0	1	0	0	0
10	002	0007	0847	81	01	1	3	0	0	1	0	0	0
10	002	0006	0843	81	01	1	3	0	0	1	0	0	0
10	002	0002	0826	81	01	1	3	0	0	1	0	0	0
10	000	0000	0843	81	01	1	4	0	0	1	0	0	0
10	000	0000	0822	81	01	1	3	0	0	1	0	0	0
10	002	0002	0826	81	01	1	3	0	0	1	0	0	0
10	002	0007	0847	81	01	1	3	0	0	1	0	0	0
10	000	0000	0843	81	01	1	4	0	0	1	0	0	0
10	002	0001	0822	81	01	1	3	0	0	1	0	0	0
10	002	0007	0847	81	01	1	3	0	0	1	0	0	0
10	000	0000	0822	81	01	1	3	0	0	1	0	0	0
10	000	0000	0822	81	01	1	3	0	0	1	0	0	0
10	000	0000	0843	81	01	1	4	0	0	1	0	0	0
10	000	0000	0843	81	01	1	3	0	0	1	0	0	0
10	002	0006	0843	81	01	1	3	0	0	2	0	0	0
10	002	0004	0835	81	01	1	1	1	14	0	0	0	0
10	002	0004	0835	81	01	1	1	1	24	0	0	0	0
10	000	0000	0838	81	01	1	1	1	28	0	0	0	0
10	000	0000	0838	81	01	1	1	1	24	0	0	0	0
10	001	0003	0810	81	01	1	1	1	20	1	0	0	0
10	001	0004	0813	81	01	1	1	1	18	1	0	0	0
10	001	0004	0813	81	01	1	1	1	24	1	0	0	0
10	000	0000	0822	81	01	1	1	1	0	1	0	0	0
10	002	0002	0826	81	01	1	1	1	24	1	0	0	0
10	002	0007	0847	81	01	1	1	1	18	1	0	0	0
10	002	0007	0847	81	01	1	1	1	26	1	0	0	0
10	002	0002	0826	81	01	1	1	1	26	1	0	0	0
10	002	0007	0847	81	01	1	1	1	18	1	0	0	0
10	000	0000	0843	81	01	1	1	1	24	1	0	0	0
10	000	0000	0843	81	01	1	1	6	26	1	0	0	0
10	002	0004	0835	81	01	2	3	0	0	0	0	0	0

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
10	002	0004	0835	81	01	2	3	0	0	0	0	0	0
10	000	0000	0830	81	01	2	3	0	0	0	0	0	0
10	002	0004	0835	81	01	2	3	0	0	0	0	0	0
10	001	0003	0810	81	01	2	3	0	0	1	0	0	0
10	001	0003	0810	81	01	2	3	0	0	1	0	0	0
10	001	0003	0810	81	01	2	2	0	0	1	0	0	0
10	001	0001	0804	81	01	2	3	0	0	1	0	0	0
10	001	0001	0804	81	01	2	3	0	0	1	0	0	0
10	001	0002	0806	81	01	2	2	0	0	1	0	0	0
10	000	0000	0830	81	01	2	3	0	0	1	0	0	0
10	002	0006	0843	81	01	2	3	0	0	1	0	0	0
10	000	0000	0822	81	01	2	3	0	0	1	0	0	0
10	002	0007	0847	81	01	2	3	0	0	1	0	0	0
10	000	0000	0838	81	01	2	2	0	0	1	0	0	0
10	002	0006	0843	81	01	2	3	0	0	1	0	0	0
10	000	0000	0838	81	01	2	3	0	0	1	0	0	0
10	000	0000	0838	81	01	2	3	0	0	1	0	0	0
10			0835	81	01	2	3	0	0	1	0	0	0
10	002	0007	0847	81	01	2	3	0	0	1	0	0	0
10	002	0007	0847	81	01	2	3	0	0	1	0	0	0
10	002	0007	0847	81	01	2	1	1	24	1	0	0	0
10	000	0000	0843	81	01	2	1	1	12	1	0	0	0
10	001	0004	0813	81	02	1	3	0	0	0	0	0	0
10	000	0000	0843	81	02	1	0	0	0	4	0	0	0
10	002	0001	0822	81	02	2	3	0	0	0	0	0	0
10	002	0002	0826	81	02	2	2	0	0	4	0	0	0
10	000	0000	0838	81	02	2	3	0	0	5	0	0	0
10	000	0000	0822	81	03	1	0	0	0	3	0	0	0
10	002	0003	0830	81	03	1	3	0	0	4	0	0	0
10	000	0000	0830	81	03	1	3	0	0	4	0	0	0
10	002	0007	0847	81	03	1	3	0	0	4	0	0	0
10	000	0000	0826	81	03	3	3	0	0	0	0	0	0
10	001	0003	0810	81	05	1	3	0	0	0	0	0	0
10	001	0003	0810	81	05	1	3	0	0	0	0	0	0
10	001	0001	0804	81	05	1	3	0	0	0	0	0	0
10	001	0001	0804	81	05	1	3	0	0	0	0	0	0
10	001	0003	0810	81	05	1	3	0	0	0	0	0	0
10	000	0000	0830	81	05	1	3	0	0	0	0	0	0
10	002	0002	0826	81	05	1	3	0	0	0	0	0	0
10	002	0001	0822	81	05	1	3	0	0	0	0	0	0
10	001	0004	0813	81	05	1	3	0	0	0	0	0	0
10	001	0003	0810	81	05	2	3	0	0	0	0	0	0
10	001	0001	0804	81	05	2	3	0	0	0	0	0	0
10	002	0001	0822	81	05	2	3	0	0	0	0	0	0
10	001	0004	0813	81	05	2	3	0	0	0	0	0	0
10	000	0000	0830	81	05	2	3	0	0	0	0	0	0
10	002	0007	0847	81	06	1	3	0	0	0	0	0	0
10			0847	81	06	1	3	0	0	0	0	0	0
10	001	0001	0804	81	06	1	3	0	0	0	0	0	0
10	001	0001	0804	81	06	1	3	0	0	0	0	0	0
10	001	0004	0813	81	06	1	3	0	0	0	0	0	0
10	001	0001	0804	81	06	1	3	0	0	0	0	0	0
10	002	0005	0838	81	06	1	4	0	0	0	0	0	1
10	002	0005	0838	81	06	1	3	0	0	0	0	0	1
10	001	0003	0810	81	06	1	3	0	0	0	0	0	1
10	002	0001	0822	81	06	1	3	0	0	0	0	0	1
10	002	0001	0822	81	06	1	3	0	0	0	0	0	1
10	001	0004	0813	81	06	1	3	0	0	0	0	0	1
10	002	0005	0838	81	06	1	4	0	0	0	0	0	1
10	002	0001	0822	81	06	1	3	0	0	0	0	0	1
10	002	0005	0838	81	06	1	3	0	0	0	0	0	1
10	002	0007	0847	81	06	1	3	0	0	0	0	0	1
10	002	0001	0822	81	06	1	3	0	0	0	0	0	1
10	002	0007	0847	81	06	1	3	0	0	0	0	0	1
10	002	0002	0826	81	06	1	4	0	0	0	0	0	1
10	001	0002	0806	81	06	1	1	1	26	0	0	0	0
10	001	0003	0810	81	06	1	1	1	18	0	0	0	1
10	002	0005	0838	81	06	1	1	1	20	0	0	0	1
10	002	0006	0843	81	06	1	1	3	26	0	0	0	0
10	000	0000	0838	81	06	1	1	3	20	0	0	0	1
10	001	0003	0810	81	06	2	2	0	0	0	0	0	0
10	001	0003	0810	81	06	2	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
10	001	0003	0810	81	06	2	3	0	0	0	0	0	0
10	001	0001	0804	81	06	2	3	0	0	0	0	0	0
10	001	0003	0810	81	06	2	3	0	0	0	0	0	0
10	001	0001	0804	81	06	2	3	0	0	0	0	0	0
10	001	0003	0810	81	06	2	3	0	0	0	0	0	0
10	001	0001	0804	81	06	2	3	0	0	0	0	0	0
10	001	0003	0810	81	06	2	2	0	0	0	0	0	0
10	001	0003	0810	81	06	2	3	0	0	0	0	0	0
10	001	0001	0804	81	06	2	3	0	0	0	0	0	0
10	002	0006	0843	81	06	2	3	0	0	0	0	0	0
10	002	0005	0838	81	06	2	3	0	0	0	0	0	0
10	002	0001	0822	81	06	2	3	0	0	0	0	0	0
10	001	0002	0806	81	06	2	3	0	0	0	0	0	0
10	002	0003	0830	81	06	2	3	0	0	0	0	0	0
10	001	0002	0806	81	06	2	3	0	0	0	0	0	0
10	001	0003	0810	81	06	2	3	0	0	0	0	0	0
10	001	0002	0806	81	06	2	3	0	0	0	0	0	0
10	002	0001	0822	81	06	2	3	0	0	0	0	0	0
10	001	0002	0806	81	06	2	3	0	0	0	0	0	0
10	002	0001	0822	81	06	2	3	0	0	0	0	0	0
10	001	0002	0806	81	06	2	3	0	0	0	0	0	0
10	002	0001	0822	81	06	2	3	0	0	0	0	0	0
10	001	0001	0804	81	06	2	2	0	0	0	0	0	0
10	001	0003	0810	81	06	2	3	0	0	0	0	0	0
10	001	0002	0806	81	06	2	3	0	0	0	0	0	0
10	001	0003	0810	81	06	2	3	0	0	0	0	0	0
10	001	0002	0806	81	06	2	3	0	0	0	0	0	0
10	002	0007	0847	81	06	2	3	0	0	0	0	0	0
10	001	0002	0806	81	06	2	3	0	0	0	0	0	0
10	002	0001	0822	81	06	2	3	0	0	0	0	0	0
10	002	0002	0826	81	06	2	3	0	0	0	0	0	0
10	001	0003	0810	81	06	2	3	0	0	0	0	0	0
10	002	0002	0826	81	06	2	3	0	0	0	0	0	0
10	001	0003	0810	81	06	2	3	0	0	0	0	0	0
10	002	0002	0826	81	06	2	3	0	0	0	0	0	0
10	002	0002	0826	81	06	2	3	0	0	0	0	0	0
10	002	0002	0826	81	06	2	3	0	0	0	0	0	0
10	002	0004	0835	81	06	2	3	0	0	0	0	0	0
10	002	0006	0843	81	06	2	3	0	0	0	0	0	0
10	002	0004	0835	81	06	2	3	0	0	0	0	0	0
10	002	0006	0843	81	06	2	3	0	0	0	0	0	0
10	002	0005	0838	81	06	2	3	0	0	0	0	0	0
10	002	0001	0822	81	06	2	3	0	0	0	0	0	0
10	002	0005	0838	81	06	2	3	0	0	0	0	0	0
10	002	0006	0843	81	06	2	3	0	0	0	0	0	0
10	002	0006	0843	81	06	2	3	0	0	0	0	0	0
10	002	0001	0822	81	06	2	3	0	0	0	0	0	0
10	002	0006	0843	81	06	2	3	0	0	0	0	0	0
10	000	0000	0838	81	06	2	3	0	0	0	0	0	0
10	002	0004	0835	81	06	2	3	0	0	0	0	0	0
10	002	0001	0822	81	06	2	3	0	0	0	0	0	0
10	002	0006	0843	81	06	2	4	0	0	0	0	0	0
10	002	0007	0847	81	06	2	3	0	0	0	0	0	0
10	002	0002	0826	81	06	2	3	0	0	0	0	0	0
10	002	0001	0822	81	06	2	3	0	0	0	0	0	0
10	002	0004	0835	81	06	2	3	0	0	0	0	0	0
10	002	0007	0847	81	06	2	4	0	0	0	0	0	0
10	002	0006	0843	81	06	2	3	0	0	0	0	0	0
10	002	0005	0838	81	06	2	3	0	0	0	0	0	0
10	002	0006	0843	81	06	2	3	0	0	0	0	0	0
10	002	0004	0835	81	06	2	3	0	0	0	0	0	0
10	002	0006	0843	81	06	2	3	0	0	0	0	0	0
10	001	0004	0813	81	06	2	3	0	0	0	0	0	0
10	002	0006	0843	81	06	2	3	0	0	0	0	0	0
10	002	0007	0847	81	06	2	3	0	0	0	0	0	0
10	002	0004	0835	81	06	2	3	0	0	0	0	0	0
10	002	0001	0822	81	06	2	3	0	0	0	0	0	0
10	002	0004	0835	81	06	2	3	0	0	0	0	0	0
10	002	0004	0835	81	06	2	3	0	0	0	0	0	0
10	002	0006	0843	81	06	2	4	0	0	0	0	0	0
10	002	0002	0826	81	06	2	3	0	0	0	0	0	0
10	002	0007	0847	81	06	2	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
10	002	0005	0838	81	06	2	3	0	0	0	0	0	0
10	002	0007	0847	81	06	2	3	0	0	0	0	0	0
10	001	0004	0813	81	06	2	3	0	0	0	0	0	0
10	002	0007	0847	81	06	2	3	0	0	0	0	0	0
10	002	0007	0847	81	06	2	3	0	0	0	0	0	0
10	002	0007	0847	81	06	2	3	0	0	0	0	0	0
10	002	0007	0847	81	06	2	3	0	0	0	0	0	0
10	002	0007	0847	81	06	2	3	0	0	0	0	0	0
10	002	0004	0835	81	06	2	3	0	0	0	0	0	0
10	002	0007	0847	81	06	2	3	0	0	0	0	0	0
10	002	0002	0826	81	06	2	3	0	0	0	0	0	0
10	002	0003	0830	81	06	2	3	0	0	0	0	0	0
10	002	0007	0847	81	06	2	3	0	0	0	0	0	0
10	002	0001	0822	81	06	2	3	0	0	0	0	0	0
10	001	0004	0813	81	06	2	4	0	0	0	0	0	0
10	002	0001	0822	81	06	2	3	0	0	0	0	0	0
10	002	0003	0830	81	06	2	3	0	0	0	0	0	0
10	002	0001	0822	81	06	2	4	0	0	0	0	0	0
10	002	0001	0822	81	06	2	3	0	0	0	0	0	0
10	002	0001	0822	81	06	2	3	0	0	0	0	0	0
10	001	0004	0813	81	06	2	3	0	0	0	0	0	0
10	002	0004	0835	81	06	2	3	0	0	0	0	0	0
10	002	0003	0830	81	06	2	3	0	0	0	0	0	0
10	002	0006	0843	81	06	2	3	0	0	0	0	0	0
10	002	0005	0838	81	06	2	3	0	0	0	0	0	0
10	002	0006	0843	81	06	2	4	0	0	0	0	0	0
10	002	0001	0822	81	06	2	3	0	0	0	0	0	0
10	002	0004	0835	81	06	2	3	0	0	0	0	0	0
10	002	0005	0838	81	06	2	3	0	0	0	0	0	0
10	002	0006	0843	81	06	2	3	0	0	0	0	0	0
10	002	0003	0830	81	06	2	3	0	0	0	0	0	0
10	002	0004	0835	81	06	2	3	0	0	0	0	0	0
10	002	0001	0822	81	06	2	3	0	0	0	0	0	0
10	002	0004	0835	81	06	2	3	0	0	0	0	0	0
10	000	0000	0830	81	06	2	4	0	0	0	0	0	0
10	002	0003	0830	81	06	2	3	0	0	0	0	0	0
10	002	0003	0830	81	06	2	3	0	0	0	0	0	0
10	002	0005	0838	81	06	2	2	0	0	0	0	0	0
10	000	0000	0838	81	06	2	3	0	0	0	0	0	0
10	002	0004	0835	81	06	2	3	0	0	0	0	0	0
10	002	0003	0830	81	06	2	3	0	0	0	0	0	0
10	002	0004	0835	81	06	2	3	0	0	0	0	0	0
10	001	0001	0804	81	06	2	3	0	0	0	0	0	0
10	002	0004	0835	81	06	2	3	0	0	0	0	0	0
10	001	0000	0801	81	06	2	3	0	0	0	0	0	0
10	002	0007	0847	81	06	2	4	0	0	0	0	0	0
10	001	0001	0804	81	06	2	3	0	0	0	0	0	0
10	002	0004	0835	81	06	2	3	0	0	0	0	0	0
10	001	0001	0804	81	06	2	3	0	0	0	0	0	0
10	002	0004	0835	81	06	2	3	0	0	0	0	0	0
10	001	0002	0806	81	06	2	3	0	0	0	0	0	0
10	002	0004	0835	81	06	2	3	0	0	0	0	0	0
10	001	0002	0806	81	06	2	3	0	0	0	0	0	0
10	002	0002	0826	81	06	2	3	0	0	0	0	0	0
10	001	0003	0810	81	06	2	2	0	0	0	0	0	0
10	002	0007	0847	81	06	2	2	0	0	0	0	0	0
10	001	0003	0810	81	06	2	3	0	0	0	0	0	0
10	002	0007	0847	81	06	2	3	0	0	0	0	0	0
10	001	0000	0801	81	06	2	3	0	0	0	0	0	0
10	002	0004	0835	81	06	2	3	0	0	0	0	0	0
10	002	0002	0826	81	06	2	3	0	0	0	0	0	0
10	002	0007	0847	81	06	2	3	0	0	0	0	0	0
10	002	0007	0847	81	06	2	3	0	0	0	0	0	0
10	002	0006	0843	81	06	2	3	0	0	0	0	0	0
10	002	0003	0830	81	06	2	3	0	0	0	0	0	0
10	002	0002	0826	81	06	2	3	0	0	0	0	0	0
10	002	0006	0843	81	06	2	2	0	0	0	0	0	0
10	002	0006	0843	81	06	2	4	0	0	0	0	0	0
10	002	0004	0835	81	06	2	3	0	0	0	0	0	0
10	002	0006	0843	81	06	2	3	0	0	0	0	0	1
10	002	0000	0803	81	06	2	3	0	0	0	0	0	1
10	002	0006	0843	81	06	2	3	0	0	0	0	0	1

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
10	002	0006	0843	81	06	2	2	0	0	0	0	0	1
10	001	0002	0806	81	06	2	1	1	18	0	0	0	0
10	002	0005	0838	81	06	2	1	1	18	0	0	0	0
10	001	0004	0813	81	06	2	1	3	18	0	0	0	0
10	002	0006	0843	81	07	1	3	0	0	0	0	0	0
10	002	0007	0847	81	07	1	3	0	0	0	0	0	1
10	002	0001	0822	81	07	1	1	3	0	0	0	0	0
10	001	0002	0806	81	07	2	3	0	0	0	0	0	0
10	001	0001	0804	81	07	2	2	0	0	0	0	0	0
10	001	0003	0810	81	07	2	3	0	0	0	0	0	0
10	002	0004	0835	81	07	2	3	0	0	0	0	0	0
10	002	0003	0830	81	07	2	3	0	0	0	0	0	0
10	002	0007	0847	81	07	2	2	0	0	0	0	0	0
10	002	0003	0830	81	07	2	3	0	0	0	0	0	0
10	001	0003	0810	81	07	2	3	0	0	0	0	0	0
10	001	0004	0813	81	07	2	3	0	0	0	0	0	0
10	002	0004	0835	81	07	2	3	0	0	0	0	0	0
10	002	0003	0830	81	07	2	2	0	0	0	0	0	0
10	001	0003	0810	81	07	2	3	0	0	0	0	0	0
10	001	0003	0810	81	07	2	3	0	0	0	0	0	0
10	001	0004	0813	81	07	2	3	0	0	0	0	0	0
10	002	0006	0843	81	07	2	2	0	0	0	0	0	0
10	002	0004	0835	81	07	2	3	0	0	0	0	0	0
10	002	0005	0838	81	07	2	2	0	0	0	0	0	0
10	000	0000	0838	81	07	2	3	0	0	0	0	0	0
10	002	0005	0838	81	07	2	3	0	0	0	0	0	0
10	002	0003	0830	81	07	2	3	1	20	0	0	0	0
10	002	0006	0843	81	07	2	1	3	26	0	0	0	0
10	000	0000	0843	81	07	2	1	7	22	1	0	0	0
10	000	0000	0843	81	08	0	1	3	20	0	0	0	0
10	000	0000	0822	81	08	2	2	0	0	0	0	0	0
10	000	0000	0864	81	08	2	1	7	20	0	0	0	0
10	000	0000	0830	81	11	2	3	0	0	0	0	0	0
10	001	0004	0813	81	12	1	3	0	0	4	5	0	0
10			0847	81	21	1	3	0	0	3	0	0	0
10	001	0004	0813	81	29	1	3	0	0	0	0	0	1
10	000	0000	0838	81	29	2	3	0	0	0	0	0	0
10	002	0006	0843	81	29	2	2	0	0	0	0	0	0
10	000	0000	0838	81	29	2	3	0	0	0	0	0	0
10	002	0006	0843	81	30	1	3	0	0	0	0	0	0
10	002	0006	0843	81	30	1	1	3	24	0	0	0	0
10	002	0006	0843	81	30	2	3	0	0	0	0	0	0
10	002	0006	0843	81	30	2	3	0	0	0	0	0	0
10	002	0007	0847	81	31	1	3	0	0	0	0	0	0
10	002	0006	0843	81	32	2	3	0	0	0	0	0	0
10	002	0006	0843	81	46	1	3	0	0	4	4	0	0
10			0822	81	46	1	1	9	24	4	5	0	0
10			0847	81	48	1	3	0	0	7	6	0	0
10	002	0000	0854	82	01	1	3	0	0	0	0	0	0
10	000	0000	0860	82	01	1	3	0	0	0	0	0	0
10	000	0000	0860	82	01	1	3	0	0	0	0	0	0
10	000	0000	0860	82	01	1	3	0	0	0	0	0	0
10	000	0000	0860	82	01	1	3	0	0	0	0	0	0
10	000	0000	0860	82	01	1	3	0	0	0	0	0	0
10	000	0000	0860	82	01	1	3	0	0	0	0	0	0
10	000	0000	0860	82	01	1	3	0	0	0	0	0	0
10	000	0000	0850	82	01	1	3	0	0	1	0	0	0
10	002	0007	0850	82	01	1	3	0	0	1	0	0	0
10	001	0005	0815	82	01	1	3	0	0	1	0	0	0
10	001	0005	0815	82	01	1	2	0	0	1	0	0	0
10	000	0000	0850	82	01	1	3	0	0	1	0	0	0
10	000	0000	0850	82	01	1	3	0	0	1	0	0	0
10	000	0000	0850	82	01	1	3	0	0	1	0	0	0
10	001	0005	0815	82	01	1	2	0	0	1	0	0	0
10	001	0005	0815	82	01	1	3	0	0	1	0	0	0
10	000	0000	0818	82	01	1	3	0	0	1	0	0	0
10	002	0000	0854	82	01	1	3	0	0	1	0	0	0
10	002	0008	0854	82	01	1	3	0	0	1	0	0	0
10	000	0000	0850	82	01	1	3	0	0	1	0	0	0
10	002	0007	0850	82	01	1	3	0	0	1	0	0	0
10	000	0000	0818	82	01	1	0	0	0	1	0	0	0
10	000	0000	0850	82	01	1	3	0	0	1	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
10	002	0007	0850	82	01	1	4	0	0	1	0	0	0
10	002	0008	0854	82	01	1	3	0	0	1	0	0	0
10	002	0000	0854	82	01	1	3	0	0	1	0	0	0
10	002	0009	0857	82	01	1	3	0	0	1	0	0	0
10	000	0000	0857	82	01	1	3	0	0	1	0	0	0
10	000	0000	0857	82	01	1	3	0	0	1	0	0	0
10	002	0000	0854	82	01	1	3	0	0	1	0	0	0
10	002	0009	0857	82	01	1	3	0	0	1	0	0	0
10	000	0000	0857	82	01	1	3	0	0	1	0	0	0
10	002	0000	0854	82	01	1	3	0	0	1	0	0	0
10	002	0000	0854	82	01	1	3	0	0	1	0	0	0
10	002	0000	0854	82	01	1	3	0	0	2	0	0	0
10	000	0000	0850	82	01	1	1	1	24	0	0	0	0
10	000	0000	0850	82	01	1	1	1	24	0	0	0	0
10	000	0000	0850	82	01	1	1	1	0	0	0	0	0
10	000	0000	0850	82	01	1	1	1	24	0	0	0	0
10	000	0000	0850	82	01	1	1	1	26	0	0	0	0
10	000	0000	0850	82	01	1	1	1	20	0	0	0	0
10	000	0000	0860	82	01	1	1	1	0	0	0	0	0
10	000	0000	0860	82	01	1	1	1	20	0	0	0	0
10	000	0000	0860	82	01	1	1	1	26	0	0	0	0
10	002	0000	0854	82	01	1	1	1	22	1	0	0	0
10	002	0008	0854	82	01	1	1	1	20	1	0	0	0
10	000	0000	0857	82	01	1	1	1	18	1	0	0	0
10	000	0000	0818	82	01	1	1	1	0	1	0	0	0
10	002	0000	0854	82	01	1	1	1	18	1	0	0	0
10	002	0007	0850	82	01	2	3	0	0	0	0	0	0
10	000	0000	0850	82	01	2	3	0	0	1	0	0	0
10	000	0000	0818	82	01	2	3	0	0	1	0	0	0
10	000	0000	0818	82	01	2	6	0	0	1	0	0	0
10	002	0000	0854	82	01	2	3	0	0	1	0	0	0
10	002	0000	0854	82	01	2	3	0	0	1	0	0	0
10	002	0000	0854	82	01	2	3	0	0	1	0	0	0
10	002	0000	0854	82	01	2	3	0	0	1	0	0	0
10	000	0000	0850	82	01	2	3	0	0	1	0	0	0
10	002	0000	0854	82	01	2	3	0	0	1	0	0	0
10	000	0000	0818	82	01	5	1	1	10	0	1	0	0
10	002	0008	0854	82	02	1	3	0	0	0	0	0	0
10	000	0000	0860	82	02	2	2	0	0	0	0	0	0
10	002	0000	0854	82	03	1	3	0	0	1	0	0	0
10	002	0000	0854	82	03	1	3	0	0	1	0	0	0
10	002	0000	0854	82	03	1	3	0	0	4	0	0	0
10	002	0000	0854	82	03	1	3	0	0	7	0	0	0
10	002	0000	0854	82	03	1	3	0	0	7	0	0	0
10	001	0005	0815	82	04	1	3	0	0	4	0	0	0
10	001	0005	0815	82	04	1	1	1	20	4	5	0	0
10	000	0000	0818	82	05	1	3	0	0	0	0	0	0
10	001	0006	0818	82	05	1	3	0	0	0	0	0	0
10	002	0008	0854	82	05	1	3	0	0	0	0	0	0
10	002	0008	0854	82	05	1	3	0	0	0	0	0	0
10	002	0010	0860	82	05	1	3	0	0	0	0	0	0
10	000	0000	0860	82	05	2	3	0	0	0	0	0	0
10	000	0000	0860	82	06	0	1	1	0	0	0	0	0
10	001	0005	0815	82	06	1	3	0	0	0	0	0	0
10	002	0008	0854	82	06	1	3	0	0	0	0	0	0
10	002	0007	0850	82	06	1	3	0	0	0	0	0	0
10	002	0009	0857	82	06	1	3	0	0	0	0	0	0
10	002	0007	0850	82	06	1	3	0	0	0	0	0	0
10	002	0010	0860	82	06	1	3	0	0	0	0	0	0
10	002	0007	0850	82	06	1	3	0	0	0	0	0	0
10	002	0007	0850	82	06	1	3	0	0	0	0	0	0
10	002	0008	0854	82	06	1	3	0	0	0	0	0	0
10	002	0008	0854	82	06	1	3	0	0	0	0	0	1
10	002	0007	0850	82	06	1	3	0	0	0	0	0	1
10	002	0008	0854	82	06	1	3	0	0	0	0	0	1
10	002	0007	0850	82	06	1	3	0	0	0	0	0	1
10	001	0005	0815	82	06	1	3	0	0	0	0	0	1
10	002	0007	0850	82	06	1	3	0	0	0	0	0	1
10	002	0007	0850	82	06	1	3	0	0	0	0	0	1
10	002	0008	0854	82	06	1	3	0	0	0	0	0	1
10	002	0007	0850	82	06	1	3	0	0	0	0	0	1
10	002	0008	0854	82	06	1	3	0	0	0	0	0	1

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
10	002	0008	0854	82	06	1	3	0	0	0	0	0	1
10	002	0008	0854	82	06	1	4	0	0	0	0	0	1
10	002	0008	0854	82	06	1	3	0	0	0	0	0	1
10	001	0006	0818	82	06	1	3	0	0	0	0	0	1
10	002	0007	0850	82	06	1	3	0	0	0	0	0	1
10	002	0007	0850	82	06	1	3	0	0	0	0	0	1
10	002	0008	0854	82	06	1	3	0	0	0	0	0	1
10	002	0008	0854	82	06	1	3	0	0	0	0	0	1
10	002	0008	0854	82	06	1	3	0	0	0	0	0	1
10	002	0007	0850	82	06	1	3	0	0	0	0	0	1
10	002	0007	0850	82	06	1	3	0	0	0	0	0	1
10	002	0007	0850	82	06	1	3	0	0	0	0	0	1
10	002	0007	0850	82	06	1	3	0	0	0	0	0	1
10	002	0007	0850	82	06	1	3	0	0	0	0	0	1
10	000	0000	0818	82	06	1	1	1	20	0	0	0	0
10	002	0007	0850	82	06	1	1	3	24	0	0	0	1
10	002	0008	0854	82	06	1	1	8	18	0	0	0	0
10	002	0010	0860	82	06	2	3	0	0	0	0	0	0
10	002	0010	0860	82	06	2	3	0	0	0	0	0	0
10	002	0009	0857	82	06	2	3	0	0	0	0	0	0
10	002	0008	0854	82	06	2	3	0	0	0	0	0	0
10	002	0009	0857	82	06	2	3	0	0	0	0	0	0
10	002	0008	0854	82	06	2	3	0	0	0	0	0	0
10	002	0010	0860	82	06	2	3	0	0	0	0	0	0
10	002	0010	0860	82	06	2	3	0	0	0	0	0	0
10	002	0008	0854	82	06	2	3	0	0	0	0	0	0
10	002	0009	0857	82	06	2	3	0	0	0	0	0	0
10	002	0008	0854	82	06	2	3	0	0	0	0	0	0
10	002	0008	0854	82	06	2	3	0	0	0	0	0	0
10	002	0009	0857	82	06	2	3	0	0	0	0	0	0
10	002	0008	0854	82	06	2	3	0	0	0	0	0	0
10	002	0009	0857	82	06	2	3	0	0	0	0	0	0
10	002	0009	0857	82	06	2	3	0	0	0	0	0	0
10	002	0010	0860	82	06	2	3	0	0	0	0	0	0
10	002	0008	0854	82	06	2	3	0	0	0	0	0	0
10	002	0008	0854	82	06	2	3	0	0	0	0	0	0
10	002	0010	0860	82	06	2	3	0	0	0	0	0	0
10	002	0010	0860	82	06	2	3	0	0	0	0	0	0
10	002	0009	0857	82	06	2	3	0	0	0	0	0	0
10	002	0008	0854	82	06	2	3	0	0	0	0	0	0
10	002	0008	0854	82	06	2	3	0	0	0	0	0	0
10	002	0009	0857	82	06	2	3	0	0	0	0	0	0
10	002	0010	0860	82	06	2	2	0	0	0	0	0	0
10	002	0008	0854	82	06	2	3	0	0	0	0	0	0
10	002	0010	0860	82	06	2	3	0	0	0	0	0	0
10	002	0009	0857	82	06	2	3	0	0	0	0	0	0
10	002	0009	0857	82	06	2	3	0	0	0	0	0	0
10	002	0010	0860	82	06	2	3	0	0	0	0	0	0
10	000	0000	0860	82	06	2	3	0	0	0	0	0	0
10	002	0008	0854	82	06	2	3	0	0	0	0	0	0
10	002	0008	0854	82	06	2	3	0	0	0	0	0	0
10	002	0010	0860	82	06	2	3	0	0	0	0	0	0
10	002	0008	0854	82	06	2	3	0	0	0	0	0	0
10	002	0008	0854	82	06	2	3	0	0	0	0	0	0
10	002	0008	0854	82	06	2	3	0	0	0	0	0	0
10	002	0010	0860	82	06	2	3	0	0	0	0	0	0
10	002	0008	0854	82	06	2	3	0	0	0	0	0	0
10	002	0010	0860	82	06	2	3	0	0	0	0	0	0
10	002	0009	0857	82	06	2	3	0	0	0	0	0	0
10	002	0009	0857	82	06	2	3	0	0	0	0	0	0
10	001	0005	0815	82	06	2	3	0	0	0	0	0	0
10	002	0010	0860	82	06	2	3	0	0	0	0	0	0
10	001	0006	0818	82	06	2	3	0	0	0	0	0	0
10	002	0008	0854	82	06	2	3	0	0	0	0	0	0
10	002	0007	0850	82	06	2	3	0	0	0	0	0	0
10	002	0009	0857	82	06	2	3	0	0	0	0	0	0
10	001	0005	0815	82	06	2	3	0	0	0	0	0	0
10	002	0008	0854	82	06	2	3	0	0	0	0	0	0
10	002	0007	0850	82	06	2	3	0	0	0	0	0	0
10	002	0010	0860	82	06	2	3	0	0	0	0	0	0
10	002	0010	0860	82	06	2	3	0	0	0	0	0	0
10	000	0000	0860	82	06	2	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
10	002	0009	0857	82	06	2	3	0	0	0	0	0	0
10	002	0010	0860	82	06	2	3	0	0	0	0	0	0
10	001	0005	0815	82	06	2	3	0	0	0	0	0	0
10	002	0007	0850	82	06	2	3	0	0	0	0	0	0
10	002	0007	0850	82	06	2	3	0	0	0	0	0	0
10	002	0008	0854	82	06	2	3	0	0	0	0	0	0
10	002	0009	0857	82	06	2	3	0	0	0	0	0	0
10	001	0005	0815	82	06	2	3	0	0	0	0	0	0
10	001	0005	0815	82	06	2	3	0	0	0	0	0	0
10	002	0007	0850	82	06	2	3	0	0	0	0	0	0
10	001	0006	0818	82	06	2	3	0	0	0	0	0	0
10	002	0009	0857	82	06	2	3	0	0	0	0	0	0
10	002	0007	0850	82	06	2	3	0	0	0	0	0	0
10	001	0006	0818	82	06	2	3	0	0	0	0	0	0
10	001	0006	0818	82	06	2	3	0	0	0	0	0	0
10	001	0005	0815	82	06	2	3	0	0	0	0	0	0
10	001	0005	0815	82	06	2	3	0	0	0	0	0	0
10	002	0007	0850	82	06	2	4	0	0	0	0	0	0
10	001	0005	0815	82	06	2	3	0	0	0	0	0	0
10	002	0008	0854	82	06	2	2	0	0	0	0	0	0
10	001	0005	0815	82	06	2	3	0	0	0	0	0	0
10	002	0007	0850	82	06	2	3	0	0	0	0	0	0
10	001	0005	0815	82	06	2	3	0	0	0	0	0	0
10	002	0008	0854	82	06	2	3	0	0	0	0	0	0
10	001	0006	0818	82	06	2	3	0	0	0	0	0	0
10	001	0005	0815	82	06	2	3	0	0	0	0	0	0
10	001	0005	0815	82	06	2	3	0	0	0	0	0	0
10	001	0005	0815	82	06	2	3	0	0	0	0	0	0
10	002	0007	0850	82	06	2	3	0	0	0	0	0	0
10	001	0006	0818	82	06	2	3	0	0	0	0	0	0
10	001	0006	0818	82	06	2	3	0	0	0	0	0	0
10	002	0009	0857	82	06	2	3	0	0	0	0	0	0
10	001	0005	0815	82	06	2	3	0	0	0	0	0	0
10	001	0005	0815	82	06	2	3	0	0	0	0	0	0
10	001	0006	0818	82	06	2	3	0	0	0	0	0	0
10	001	0006	0818	82	06	2	3	0	0	0	0	0	0
10	001	0006	0818	82	06	2	3	0	0	0	0	0	0
10	001	0005	0815	82	06	2	3	0	0	0	0	0	0
10	002	0008	0854	82	06	2	3	0	0	0	0	0	0
10	001	0005	0815	82	06	2	3	0	0	0	0	0	0
10	001	0006	0818	82	06	2	3	0	0	0	0	0	0
10	002	0007	0850	82	06	2	3	0	0	0	0	0	0
10	001	0006	0818	82	06	2	3	0	0	0	0	0	0
10	001	0005	0815	82	06	2	3	0	0	0	0	0	0
10	002	0007	0850	82	06	2	3	0	0	0	0	0	0
10	001	0005	0815	82	06	2	3	0	0	0	0	0	0
10	001	0005	0815	82	06	2	3	0	0	0	0	0	0
10	001	0005	0815	82	06	2	3	0	0	0	0	0	0
10	002	0007	0850	82	06	2	3	0	0	0	0	0	0
10	002	0008	0854	82	06	2	3	0	0	0	0	0	0
10	002	0008	0854	82	06	2	3	0	0	0	0	0	0
10	000	0000	0857	82	06	2	3	0	0	0	0	0	0
10	002	0007	0850	82	06	2	3	0	0	0	0	0	0
10	002	0008	0854	82	06	2	3	0	0	0	0	0	0
10	001	0006	0818	82	06	2	3	0	0	0	0	0	0
10	001	0005	0815	82	06	2	3	0	0	0	0	0	0
10	001	0006	0818	82	06	2	2	0	0	0	0	0	0
10	002	0008	0854	82	06	2	3	0	0	0	0	0	0
10	001	0005	0815	82	06	2	3	0	0	0	0	0	0
10	002	0008	0854	82	06	2	3	0	0	0	0	0	0
10	002	0007	0850	82	06	2	3	0	0	0	0	0	0
10	002	0008	0854	82	06	2	3	0	0	0	0	0	0
10	002	0008	0854	82	06	2	1	1	26	0	0	0	0
10	001	0005	0815	82	06	2	1	1	16	0	0	0	0
10	002	0008	0854	82	06	2	1	1	28	0	0	0	0
10	001	0005	0815	82	06	2	1	2	14	0	0	0	0
10	002	0009	0857	82	06	2	1	3	26	0	0	0	0
10	002	0007	0850	82	06	2	1	3	22	0	0	0	0
10	000	0000	0857	82	06	2	1	7	14	0	0	0	0
10	002	0010	0865	82	06	3	7	0	0	0	0	0	0
10	001	0006	0818	82	06	3	1	1	4	0	0	0	0
10	000	0000	0860	82	07	0	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
10	000	0000	0860	82	07	0	1	3	0	0	0	0	0
10	002	0010	0860	82	07	1	3	0	0	0	0	0	1
10	002	0008	0854	82	07	1	1	1	26	0	0	0	0
10	002	0009	0857	82	07	2	3	0	0	0	0	0	0
10	001	0006	0818	82	07	2	3	0	0	0	0	0	0
10	002	0007	0850	82	07	2	3	0	0	0	0	0	0
10	002	0007	0850	82	07	2	3	0	0	0	0	0	0
10	002	0008	0854	82	07	2	3	0	0	0	0	0	0
10	002	0008	0854	82	07	2	3	0	0	0	0	0	0
10	002	0008	0854	82	07	2	3	0	0	0	0	0	0
10	002	0008	0854	82	07	2	3	0	0	0	0	0	0
10	001	0006	0818	82	07	2	3	0	0	0	0	0	0
10	002	0009	0857	82	07	2	3	0	0	0	0	0	0
10	002	0009	0857	82	07	2	3	0	0	0	0	0	0
10	002	0008	0854	82	07	2	3	0	0	0	0	0	0
10	001	0006	0818	82	07	2	3	0	0	0	0	0	0
10	002	0009	0857	82	07	2	3	0	0	0	0	0	0
10	002	0008	0854	82	07	2	3	0	0	0	0	0	0
10	002	0010	0860	82	07	2	3	0	0	0	0	0	0
10	002	0008	0854	82	07	2	3	0	0	0	0	0	0
10	002	0007	0850	82	07	2	1	1	18	0	0	0	0
10	002	0008	0854	82	07	2	1	1	22	0	0	0	0
10	002	0008	0854	82	08	2	3	0	0	0	0	0	0
10	002	0007	0850	82	11	1	1	8	14	0	0	0	1
10	001	0005	0815	82	11	2	3	0	0	0	0	0	0
10	001	0005	0815	82	11	2	3	0	0	0	0	0	0
10	002	0009	0857	82	12	1	3	0	0	0	0	0	0
10	000	0000	0818	82	12	1	0	0	0	3	0	0	0
10	002	0000	0854	82	12	1	3	0	0	7	0	0	0
10	002	0000	0854	82	30	2	2	0	0	0	0	0	0
10	000	0000	0939	93	07	1	1	3	28	0	0	0	1

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
11	001	0008	0410	41	01	1	3	0	0	1	0	0	0
11	002	0004	0422	41	01	1	3	0	0	1	0	0	0
11	002	0004	0422	41	01	1	3	0	0	1	0	0	0
11	002	0005	0427	41	01	1	3	0	0	1	0	0	0
11	002	0004	0422	41	01	1	3	0	0	1	0	0	0
11	002	0004	0422	41	01	1	3	0	0	1	0	0	0
11	002	0005	0427	41	01	1	3	0	0	1	0	0	0
11	002	0007	0432	41	01	1	3	0	0	1	0	0	0
11	002	0006	0429	41	01	1	3	0	0	1	0	0	0
11	002	0005	0427	41	01	1	1	1	14	1	0	0	0
11	002	0004	0422	41	01	1	1	1	14	1	0	0	0
11	002	0004	0422	41	01	1	1	1	20	1	0	0	0
11	002	0004	0422	41	01	1	1	1	18	1	0	0	0
11	002	0004	0422	41	01	1	1	1	12	1	0	0	0
11	002	0002	0418	41	05	1	3	0	0	0	0	0	0
11	002	0002	0418	41	05	1	3	0	0	0	0	0	0
11	002	0003	0419	41	05	1	3	0	0	0	0	0	0
11	002	0005	0427	41	05	2	3	0	0	0	0	0	0
11	002	0005	0427	41	05	2	3	0	0	0	0	0	0
11	002	0004	0422	41	06	1	4	0	0	0	0	0	0
11	002	0006	0429	41	06	1	3	0	0	0	0	0	0
11	002	0007	0432	41	06	1	3	0	0	0	0	0	0
11	002	0002	0418	41	06	1	3	0	0	0	0	0	1
11	001	0006	0407	41	06	1	0	0	0	0	0	0	1
11	002	0009	0435	41	06	1	3	0	0	0	0	0	1
11	002	0002	0418	41	06	1	1	1	14	0	0	0	1
11	002	0005	0427	41	06	2	3	0	0	0	0	0	0
11	002	0010	0437	41	06	2	3	0	0	0	0	0	0
11	002	0009	0435	41	06	2	3	0	0	0	0	0	0
11	002	0003	0419	41	06	2	3	0	0	0	0	0	0
11	002	0010	0437	41	06	2	3	0	0	0	0	0	0
11	001	0004	0404	41	06	2	3	0	0	0	0	0	0
11	002	0010	0437	41	06	2	3	0	0	0	0	0	0
11	002	0004	0422	41	06	2	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
11	002	0010	0437	41	06	2	3	0	0	0	0	0	0
11	002	0003	0419	41	06	2	3	0	0	0	0	0	0
11	002	0010	0437	41	06	2	3	0	0	0	0	0	0
11	002	0004	0422	41	06	2	3	0	0	0	0	0	0
11	002	0010	0437	41	06	2	3	0	0	0	0	0	0
11	002	0004	0422	41	06	2	3	0	0	0	0	0	0
11	002	0005	0427	41	06	2	3	0	0	0	0	0	0
11	001	0008	0410	41	06	2	3	0	0	0	0	0	0
11	002	0005	0427	41	06	2	3	0	0	0	0	0	0
11	002	0001	0413	41	06	2	3	0	0	0	0	0	0
11	002	0009	0435	41	06	2	3	0	0	0	0	0	0
11	002	0005	0427	41	06	2	3	0	0	0	0	0	0
11	002	0009	0435	41	06	2	3	0	0	0	0	0	0
11	002	0005	0427	41	06	2	3	0	0	0	0	0	0
11	002	0009	0435	41	06	2	3	0	0	0	0	0	0
11	002	0005	0427	41	06	2	4	0	0	0	0	0	0
11	002	0003	0419	41	06	2	3	0	0	0	0	0	0
11	002	0004	0422	41	06	2	3	0	0	0	0	0	0
11	002	0004	0422	41	06	2	3	0	0	0	0	0	0
11	002	0005	0427	41	06	2	3	0	0	0	0	0	0
11	002	0005	0427	41	06	2	3	0	0	0	0	0	0
11	001	0007	0409	41	06	2	3	0	0	0	0	0	0
11	002	0004	0422	41	06	2	3	0	0	0	0	0	0
11	001	0004	0404	41	06	2	3	0	0	0	0	0	0
11	002	0004	0422	41	06	2	3	0	0	0	0	0	0
11	002	0004	0422	41	06	2	3	0	0	0	0	0	0
11	002	0004	0422	41	06	2	3	0	0	0	0	0	0
11	002	0005	0427	41	06	2	1	1	14	0	0	0	0
11	002	0002	0418	41	07	1	3	0	0	0	0	0	1
11	002	0004	0422	41	07	2	3	0	0	0	0	0	0
11	002	0004	0422	41	07	2	2	0	0	0	0	0	0
11	002	0004	0422	41	07	2	3	0	0	0	0	0	0
11	002	0004	0422	41	07	2	3	0	0	0	0	0	0
11	001	0006	0407	41	07	2	3	0	0	0	0	0	0
11	002	0010	0437	41	07	2	3	0	0	0	0	0	0
11	002	0010	0437	41	07	2	3	0	0	0	0	0	0
11	002	0010	0437	41	07	2	2	0	0	0	0	0	0
11	002	0003	0419	41	12	1	3	0	0	0	0	0	0
11	002	0005	0427	41	12	1	3	0	0	3	0	0	0
11	002	0003	0419	41	36	2	3	0	0	3	0	0	0
11	002	0003	0419	41	37	1	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
12			0422	151	45	1	3	0	0	1	0	0	0
12			0422	151	45	1	1	2	0	1	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
13	000	05-6	1505	151	03	1	3	0	0	4	0	0	0
13	000	0003	1502	151	06	1	3	0	0	0	0	0	0
13	000	0004	1503	151	06	2	3	0	0	0	0	0	0
13	000	0003	1502	151	06	2	3	0	0	0	0	0	0
13	000	0003	1502	151	06	2	3	0	0	0	0	0	0
13	000	0003	1502	151	06	2	1	1	20	0	0	0	0
13	000	0003	1502	151	06	2	1	3	22	0	0	0	0
13	000	0001	1501	151	07	2	3	0	0	0	0	0	0
13	000	0003	1502	151	08	2	0	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
14	000	0002	1507	151	05	1	3	0	0	0	0	0	0
14	000	0005	1515	151	05	1	3	0	0	1	0	0	0
14	000	0002	1507	151	05	1	1	1	18	0	0	0	0
14	000	0003	1509	151	06	2	0	0	0	0	0	0	0
14	000	0006	1517	151	06	2	2	0	0	0	0	0	0
14	000	0003	1509	151	06	2	0	0	0	0	0	0	0
14	000	0006	1517	151	06	2	3	0	0	0	0	0	0
14	000	0006	1517	151	06	2	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
15	000	0001	1513	151	07	2	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
16	000	0003	1525	151	05	1	3	0	0	1	0	0	0
16	000	0003	1525	151	06	2	3	0	0	0	0	0	0
16	000	0003	1525	151	06	2	3	0	0	0	0	0	0
16	000	0003	1525	151	07	2	2	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
17	000	0003	1522	151	01	1	3	0	0	1	0	0	0
17	000	0002	1520	151	01	1	1	1	18	1	0	0	0
17	000	0004	1531	151	05	1	3	0	0	0	0	0	0
17	000	0004	1531	151	06	1	3	0	0	0	0	0	0
17	000	0001	1519	151	06	2	3	0	0	0	0	0	0
17	000	0000	1518	151	06	2	3	0	0	0	0	0	0
17	000	0003	1522	151	06	2	3	0	0	0	0	0	0
17	000	0001	1519	151	06	2	3	0	0	0	0	0	0
17	000	0000	1518	151	06	2	3	0	0	0	0	0	0
17	000	0001	1519	151	06	2	3	0	0	0	0	0	0
17	000	0002	1520	151	06	2	3	0	0	0	0	0	0

Gallinas Springs Ceramic Analysis Listings

TRNCH	UNIT	LEVEL	FS	PLST	TYPE	VSTP	SHLOC	RMFM	RMDI	PNTI	PNTII	WORK	SM_PL
18	000	0003	1529	151	01	1	3	0	0	1	0	0	0
18	000	0003	1529	151	01	1	3	0	0	1	0	0	0
18	000	0004	1533	151	01	1	3	0	0	1	0	0	0
18	000	0004	1533	151	01	1	1	1	24	1	0	0	0
18	000	0004	1533	151	06	1	3	0	0	0	0	0	0
18	000	0006	1537	151	06	2	3	0	0	0	0	0	0
18	000	0004	1533	151	06	2	3	0	0	0	0	0	0
18	000	0004	1533	151	06	2	3	0	0	0	0	0	0
18	000	0004	1533	151	06	2	3	0	0	0	0	0	0
18	000	0006	1537	151	06	2	3	0	0	0	0	0	0
18	000	0004	1533	151	06	2	3	0	0	0	0	0	0
18	000	0004	1533	151	06	2	3	0	0	0	0	0	0
18	000	0006	1537	151	06	2	3	0	0	0	0	0	0
18	000	0002	1527	151	06	2	3	0	0	0	0	0	0

APPENDIX H

FAUNAL DATA

Appendix H - Faunal Data

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Appendix H.1

ROUGHSORT FAUNAL KEY

TOP	depth at top of level
BOT	depth at bottom of level
NUMB	item count with refit

<u>PARTS</u>

SF	shaft fragment
MP	metapodial
RAD	radius
SK	skull
FEM	femur
MAN	mandible
MT	metatarsal
MC	metacarpal
VERT, VT	vertebra(e)
MOST	most parts
MEAT	meat parts
COR	coracoid
SAC	sacrum
APPEN	appendicular parts
F, FR	fragment(s)
INNO	innominate
TBT	tibiotarsus
WASTE	non-meat parts
MANY	much of skeleton, but little pattern
CARP	carpal(s)
TARS	tarsal(s)
PMAX	pemaxilla(e)
TMT	tarsometatarsus
HUM	humerus
XIPHO	xiphosteum
MANU	manubrium
CALC	calcaneum
AST	astragalus
ACET	acetabulum
STERN	sternum
FURC	furcula
TIB	tibia(e)
SESS	sessamoid
SCAP	scapula

N_BRN	number burned

CONDIT condition:
E = excellent
G = good
F = fair
P = poor
= unremarkable

TAPHO taphonomy
SEW = surface-exposure weathering
LE = leached
ER = eroded
CB = cooking brown
SC = scat/digested
CK = cooked

COMMENTS - self explanatory except may be used as a continuation space for taphonomy

Gallinas Springs LA1178 faunal rough sort, on all bones from 1987 NFS/CGI mitigation. Rough diagnosis by Jack B. Bertram

FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
907	1	1	02	A	0	0		MMAMMAL	2	SF	1	F	LE,CB	
910	1	1	03		0	0		LMAMMAL	1	MP	0	G		
914	1	1	03		0	0		LMAMMAL	1	RAD?	0	G	LE	
910	1	1	03		0	0		SYLVILAGUS	3	SK	0	F		
913	1	1	04		0	0		LEPUS	1	FEM	0	G		
913	1	1	04		0	0		LMAMMAL	5	SF	0	F	ER	
913	1	1	04		0	0		SYLVILAGUS	2	MAN,MT	0	G		
913	1	1	04		0	0		THOMOMYS	1	FEM	0	G		
916	1	1	05		0	0		LMAMMAL	1	RIB	0	G		
916	1	1	05		0	0		not bone	1	STONE	0			
916	1	1	05		0	0		SYLVILAGUS	1	TIBIA	0	F	SEW	
919	1	1	06		0	0		THOMOMYS	3	JAW,SACRAM	0	G	SC	
922	1	2	01	A	0	0	NATURAL STRAT	ARTIO	1	MP	0	G	CB	
927	1	2	02		0	0		LMAMMAL	1	SF	0	F	SEW	
927	1	2	02		0	0		M/LMAMMAL	2	PLATEY	0	F		
927	1	2	02		0	0		MMAMMAL	1	SF	0	F		
937	1	3	01		0	0		ARTIO	1	TOOTH	1	F	CB	
937	1	3	01		0	0		LMAMMAL	1	SF	0	F	ER	
937	1	3	01		0	0		MMAMMAL	2	SF	0	F		
941	1	3	02		0	0		ARTIO	16	RIB,FEMUR,SK,VT	0	F	LE	
941	1	3	02		0	0		LEPUS	2	RIB	0	F	LE	
941	1	3	02		0	0		LMAMMAL	1	EXPED.AWL	0			artifact

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FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
1109	2	1	03		0	0		SYLVILAGUS	1	JAW	0	G	CB	
1112	2	1	04		0	0		LEPUS	8	RIB,JAW	0	G	CB	
1117	2	1	05		0	0		LEPUS	1	TIBIA	0	G		
1117	2	1	05		0	0		LMAMMAL	1	SF	0	F		
1117	2	1	05		0	0		M/LMAMMAL	7	SF,PLATEY,SKULL?	0	G,F		
1117	2	1	05		0	0		SYLVILAGUS	12	MOST	0	G		
1120	2	1	05	LH	0	0	LOWER HALF	LMAMMAL	3	SF,CAN,RIB	0	G		
1120	2	1	05	LH	0	0	LOWER HALF	M/LMAMMAL	1	SF	1			
1120	2	1	05	LH	0	0	LOWER HALF	S/MMAMMAL	8	F	0	G	CB	
1120	2	1	05	LH	0	0	LOWER HALF	SYLVILAGUS	5	MEAT	0	G	CB	
1130	2	1	06		0	0		ARTIO	17	MOST	0	G	LE	
1130	2	1	06		0	0		LEPUS	6	LEG,SKULL	0	G	LE	
1130	2	1	06		0	0		LMAMMAL	8	PLATEY	0	F	LE	
1130	2	1	06		0	0		not bone	1	ROCK	0			
1130	2	1	06		0	0		SMAMMAL	2	SKULL?	0			
1130	2	1	06		0	0		S/MMAMMAL	7	SF	1	G	LE	
1130	2	1	06		0	0		SRODENT	2	SKULL,HUMERUS	0			
1130	2	1	06		0	0		SYLVILAGUS	20	HIP,LEG,JAW	0	G	LE	
1137	2	1	07		0	0		ANTILOCAPRA	2	MAND	0			
1137	2	1	07		0	0		ARTIO	2	RIB,RAD	1		G	
1137	2	1	07		0	0		LEPUS	6	ALL	0	G	CB	
1137	2	1	07		0	0		LMAMMAL	14	SF,PLATEY	3		SEW,ER,CB	

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FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
1137	2	1	07		0	0		MBIRD	3	RAD,COR,SAC	0	G		
1137	2	1	07		0	0		not bone	2	FLAKES	0			
1137	2	1	07		0	0		SRODENT	1	INNOM	1	F		
1137	2	1	07		0	0		SYLVILAGUS	16	MEAT	0	G	CB	
1137	2	1	07		0	0		UNKNOWN	30	VARIOUS	0		SEW,ER,CB	
1146	2	1	08		0	0		ARTIO	21	MEAT	4	G	LE,CB	
1146	2	1	08		0	0		VLM(BIS/ELK)	1	SESSAMOID	0	G		
1146	2	1	08		0	0		CANID?	1	CERV.VERT	0	G	LE	
1146	2	1	08		0	0		EGGSHELL	1	FRAG	0	G	LE	
1146	2	1	08		0	0		LEPUS	22	MOST	4	G	LE,CB	
1146	2	1	08		0	0		MPASSER	4	WING,STERUM	0	G	CB	
1146	2	1	08		0	0		MROD	1	FEMUR	0	G		
1146	2	1	08		0	0		not bone	1	POTTERY	0			
1146	2	1	08		0	0		S/MMAMMAL	54	SF	5	F	SEW,LE,ER,CB	
1146	2	1	08		0	0		SYLVILAGUS	53	LEGS	2	F	LE,CB	
1149	2	1	09		0	0		ARTIO	15	SF,RIB	2	F	LE	
1149	2	1	09		0	0		LEPUS	11	MOST	0	G	CB	
1149	2	1	09		0	0		MPASSER	3	COR,ULNA	0	G	LE	
1149	2	1	09		0	0		NEOTOMA	1	HUMERUS	0	G	CB	
1149	2	1	09		0	0		ODOCOILEUS	1	RAD	0	G	CB	
1149	2	1	09		0	0		S/MMAMMAL	40	SF	5	F	CB	
1149	2	1	09		0	0		SYLVILAGUS	51	MOST	10	F	LE,CB	
1149	2	1	09		0	0		UNKNOWN	1	UNK	0			
1152	2	1	10		0	0		ARTIO	18	BODY	5	F	LE,CB	
1152	2	1	10		0	0		LEPUS	15	FEET	0	G	CB	
1152	2	1	10		0	0		NEOTOMA	4	APPEND	0	G	CB	
1152	2	1	10		0	0		SBIRD	2	ULNA,FEMUR	0	G		
1152	2	1	10		0	0		S/MMAMMAL	42	SF	5	F	LE,CB	
1152	2	1	10		0	0		SRODENT	1	FEMUR	0	G	LE	
1152	2	1	10		0	0		SYLVILAGUS	52	MOST	6	F	LE,CB	
1155	2	1	11		0	0		EGGSHELL	2	FR	0	G	LE	
1155	2	1	11		0	0		LEPUS	26	MOST	10	G	CB	
1155	2	1	11		0	0		LMAMMAL	47	MOST	5	G	LE	
1155	2	1	11		0	0		MBIRD	1	JAW	1	F	CB	
1155	2	1	11		0	0		MELEA	1	FIBULU	0			
1155	2	1	11		0	0		NEOTOMA	2	JAW	0	F	ER	
1155	2	1	11		0	0		not bone	1	ROCK	0			
1155	2	1	11		0	0		SYLVILAGUS	86	MOST	25	G	CB	
1155	2	1	11		0	0		THOMOMYS	3	JAW,FEMUR	2	F	CB	
1163	2	1	12		0	0		ANTILOCAPRA	3	JAW,FOOT	0	F	LE,CB	
1163	2	1	12		0	0		ARTIO	24	SK,LEG,RIB	4	F	LE,CB	
1163	2	1	12		0	0		CYNOMYS	1	INNO	1	F		
1163	2	1	12		0	0		LEPUS	5	VERT,LEG	0	G	CB	
1163	2	1	12		0	0		LMAMMAL	1	PLAQUE	0	G	LE	artifact
1163	2	1	12		0	0		ODOCOILEUS	2	RAD,FOOT	0	F	LE,CB	
1163	2	1	12		0	0		SRODENT	2	SK,TIBIA	0	G	CB	
1163	2	1	12		0	0		SYLVILAGUS	29	MOST FEET,SK	7	G	LE,CB	
1163	2	1	12		0	0		THOMOMYS	1	SK	1	F	LE	
1166	2	1	13		0	0		ARTIO	7	FOOT,RIB	4	G	CB	
1166	2	1	13		0	0		LEPUS	3	SK,FOOT	3	F	LE	

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FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
1166	2	1	13		0	0		SBIRD	1	TBT	0	F		
1166	2	1	13		0	0		SYLVILAGUS	10	MEAT	4	G	CB	
1170	2	1	14		0	0		ARTIO	3	RIB,HOOF	0	F	SEW,LE	
1170	2	1	14		0	0		LEPUS	5	FEM,HUM	3	F	CB	
1170	2	1	14		0	0		LMAMMAL	7	SF	0	G	LE	
1170	2	1	14		0	0		SYLVILAGUS	10	LEG,BODY	2	F	CB	
1181	2	2			0	0	STRAT 3A	ARTIO	23	JAW,FOOT,RIB	5	G	LE	
1181	2	2			0	0	STRAT 3A	LEPUS	10	MOST	3	G	CB	
1181	2	2			0	0	STRAT 3A	MBIRD	3	WING,LEG	1	G	CB	
1181	2	2			0	0	STRAT 3A	MROD	1	JAW	0	F	CB	
1181	2	2			0	0	STRAT 3A	not bone	5	CERAMIC,ROCK	0			
1181	2	2			0	0	STRAT 3A	OVIS CAN	1	HOOF	0	G	CB	
1181	2	2			0	0	STRAT 3A	S/MMAMMAL	30	F	7	F	CB	
1181	2	2			0	0	STRAT 3A	SYLVILAGUS	16	MOST	3	G	CB	
1173	2	2	01	A	0	0	"LEVEL" 1A	S/MMAMMAL	1	F	0	G		
1177	2	2	02	A	0	0		LEPUS	2	TIBIA	0	F	CB	
1177	2	2	02	A	0	0		LMAMMAL	2	F	2	F	LE	
1177	2	2	02	A	0	0		S/MMAMMAL	3	F	0	F		
1177	2	2	02	A	0	0		SRODENT	1	INNOM	1	F	CB	
1177	2	2	02	A	0	0		SYLVILAGUS	1	TIBIA	0			
1126	2	3	06		0	0		not bone	1	STONE	0			
1126	2	3	06		0	0		SYLVILAGUS	1	RAD	0	G		
1129	2	3	07		0	0		ARTIO	6	RIB	0	G		cut
1129	2	3	07		0	0		LMAMMAL	1	SF	0			
1136	2	3	08		0	0		M/LMAMMAL	6	RIB	0	F	LE	
1141	2	3	09		0	0		M/LMAMMAL	1	PLATEY	0	F	LE,ER	

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FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
41	3	1	02		0	0		LMAMMAL	1	PLATEY	0		LE	
41	3	1	02		0	0		M/LMAMMAL	1	SF	1		LE	
41	3	1	02		0	0		MROD	1	INNOM	0			
49	3	1	03		0	0		ARTIO	5	RIB,SESS,SF	0	F	LE	
49	3	1	03		0	0		LEPUS	2	TOE	0	G	CB	
49	3	1	03		0	0		SYLVILAGUS	9	LEG	1	G	CB	
49	3	1	03		0	0		UNKNOWN	1	UNK	0			
59	3	1	04		0	0		ARTIO	7	HEEL,RIB,SF	4	F	LE	
59	3	1	04		0	0		EGGSHELL	2		0	2	F	le
59	3	1	04		0	0		LEPUS	1	MT	0			
59	3	1	04		0	0		SYLVILAGUS	10	MOST	0	F	LE,CB	
61	3	1	05		0	0		ARTIO	3	FOOT,SH,RIB	0	F	LE,ER	
61	3	1	05		0	0		LEPUS	1	ULNA	0	G	CB	
61	3	1	05		0	0		NEOTOMA	1	RADIUS	0	G	CB	
61	3	1	05		0	0		ONYCHOMYS	1	SKULL	0	G		
61	3	1	05		0	0		SMAMMAL	1	SK FRAG	0	F	LE	
61	3	1	05		0	0		SYLVILAGUS	1	ULNA	0	G		
65	3	1	06		0	0		DIPO	1	TIBIA	0	E		

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FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
65	3	1	06		0	0		LMAMMAL	1	SF	0	G	CB	
65	3	1	06		0	0		not bone	3	CERAMIC,LITHIC	0			
65	3	1	06		0	0		SYLVILAGUS	3	JAW,FOOT	0	G	CB	
67	3	1	07		0	0		LMAMMAL	1	SF	1	G		
70	3	1	08		0	0		LMAMMAL	1	SF	1	G		
70	3	1	08		0	0		SYLVILAGUS	1	FEMUR	0	E		
1602	3	2			0	0	POT FILL OR UNDER PO	SYLVILAGUS	3	MT	0	G	LE	Pot
1602	3	2			0	0	POT FILL OR UNDER PO	VLM(BISON)	1	STERNUM	0	G	LE	Pot
7	3	2	02		0	0		LEPUS	1	ULNA	0	G		
7	3	2	02		0	0		LMAMMAL	2	SF	0	G	LE,ER	
9	3	2	03		0	0		ANTILOCAPRA	1	TOE	0	G		
9	3	2	03		0	0		LBIRD	1	ULNA	0	G		IMMATURE
9	3	2	03		0	0		LMAMMAL	2	SF	0	G	CB	
9	3	2	03		0	0		not bone	1	FLAKE	0			
9	3	2	03		0	0		SYLVILAGUS	6	JAW,SK,VERT	0	G	LE,CB	
13	3	2	04		0	0		ARTIO	7	RIB,TOOTH,TOE,SF	2	G	RE,CB	cut
13	3	2	04		0	0		LEPUS	2	TOE	0	G	CB	
13	3	2	04		0	0		SMAMMAL	2	SF	0	F		
13	3	2	04		0	0		SYLVILAGUS	2	JAW,TIBIA	0	G		
15	3	2	05		0	0		ARTIO	2	RIB	0	G		
15	3	2	05		0	0		MMAMMAL	1	VERT	0			
15	3	2	05		0	0		not bone	1	STONE?	0			
15	3	2	05		0	0		S/MMAMMAL	4	SF	0			
15	3	2	05		0	0		SYLVILAGUS	7	BACK,FOOT	0			
26	3	2	05	A	0	0		S/MMAMMAL	8	FR	3	F	LE,ER	
26	3	2	05	A	0	0		SYLVILAGUS	2	FEMUR	1	G	CB	
21	3	2	06		0	0		LBIRD	1	TOE	0	G		
21	3	2	06		0	0		LMAMMAL	1	SF	0	G	CB	
21	3	2	06		0	0		not bone	2	CERAMIC	0	G	LE	
22	3	2	06		0	0		OLIVA	1	SHELL	0			artifact
21	3	2	06		0	0		UNKNOWN	1	F	1	F	CB	
30	3	2	06	A	0	0		ARTIO	2	TOE,RIB	0	G	LE	BABY
30	3	2	06	A	0	0		S/MMAMMAL	7	SF	0	G		
30	3	2	06	A	0	0		SYLVILAGUS	11	SKULL,FEET	0	G		
25	3	2	07		0	0		S/MMAMMAL	1	SF	0	G		
25	3	2	07		0	0		SYLVILAGUS	3	INNOM,RAD	1	G	CB	
33	3	2	07	A	0	0		ARTIO	3	SF,PISIFORM	0	G	CB	
33	3	2	07	A	0	0		not bone	1	DAUB?	1			
33	3	2	07	A	0	0		SMAMMAL	5	SF	0	G	LE,CB	
33	3	2	07	A	0	0		SYLVILAGUS	6	SK,LEG	1	G	LE,CB	
36	3	2	08		0	0		ARTIO	9	FEET	1	F	LE,CB	
36	3	2	08		0	0		LEPUS	6	LEG,RIB	1	G	LE	
36	3	2	08		0	0		NEOTOMA	6	JAW,LEGS	0	G		
36	3	2	08		0	0		S/MMAMMAL	16	SF	7	F	LE,CB	
36	3	2	08		0	0		SYLVILAGUS	30	MOST	6	F	LE,CB	SPR.SUMMER
36	3	2	08		0	0		THOMOMYS	1	MAND	0	G		
45	3	2	09		0	0		ARTIO	9	BODY,FOOT	3	G	LE	
45	3	2	09		0	0		LEPUS	4	BODY,FOOT	1	G	CB	
45	3	2	09		0	0		NEOTOMA	1	MAND	0	G		
45	3	2	09		0	0		not bone	12	CERAM,PLANT,STONE	0			

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FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
45	3	2	09		0	0		S/MMAMMAL	27	FR	5	F	LE,ER,SC,CB	
45	3	2	09		0	0		SYLVILAGUS	44	MANY	6	F	LE,ER,CB	
51	3	2	10		0	0		ARTIO	9	FOOT,RIB	3			INCL. BABY
51	3	2	10		0	0		LEPUS	7	MANY	2	G	CB	INCL. BABY
51	3	2	10		0	0		NEOTOMA	3	LEG	0	G	CB	
51	3	2	10		0	0		SPASSER	1	CML	0	G		
51	3	2	10		0	0		S/MMAMMAL	25	SF	0	F	CB	
51	3	2	10		0	0		SYLVILAGUS	27	MANY	6	F	LE,CB	
51	3	2	10		0	0		VLM(BIS/ELK)	3	RIB	0	F	CB	
55	3	2	10	A	0	0		ARTIO	1	TOE	0	E		
55	3	2	10	A	0	0		MROD	1	PMAX	0	G		
55	3	2	10	A	0	0		SYLVILAGUS	18	MANY	0	G	LE,CB	
72	3	2	11		0	0	IN HOLE IN gravel	ARTIO	6	RIB,SKULL,CALCAN	1			INCL. BABY
72	3	2	11		0	0	IN HOLE IN gravel	LEPUS	5	VARIED	2	F	CB	
72	3	2	11		0	0	IN HOLE IN gravel	not bone	2	ROCK	0			
72	3	2	11		0	0	IN HOLE IN gravel	SYLVILAGUS	40	VARIED	0	F	LE,ER,SC	DOG/HUMAN
72	3	2	11		0	0	IN HOLE IN gravel	SYLVILAGUS	13	VARIED	0	F	LE,CB	
77	3	2	12		0	0		ARTIO	8	ANKLE,KNEE	2	G	LE	
77	3	2	12		0	0		LBIRD	1	TIBIO TARSUS	0	G		BABY
77	3	2	12		0	0		LEPUS	2	SCAP,RAD	1	G		
77	3	2	12		0	0		MROD	1	TIBIA	0	G		
77	3	2	12		0	0		SYLVILAGUS	6	SKULL,LEG	0	G		

Gallinas Springs LA1178 faunal rough sort, on all bones from 1987 NFS/CGI mitigation. Rough diagnosis by Jack B. Bertram

FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
123	4	1	01		80	90		ARTIO	1	HYOID	0	F	SEW,ER,CB	
123	4	1	01		80	90		LMAMMAL	6	SF	3	F	SEW,LE,ER,CB	cut
126	4	1	02		90	100		ARTIO	1	HUMERUS	0	G	LE	
129	4	1	03		100	110		LMAMMAL	4	FR	1	F	SEW,LE,ER	
129	4	1	03		100	110		MMAMMAL	5	SF	0	G	LE	
129	4	1	03		100	110		not bone	2	ROCK	0			
129	4	1	03		100	110		ODOCOILEUS	1	ANTLER	0	F	SEW,LE,ER	
129	4	1	03		100	110		SYLVILAGUS	1	ULNA	0	G	LE	
132	4	1	04		110	120		ARTIO	2	SF,PATELLA	0	F	SEW,ER	
132	4	1	04		110	120		LMAMMAL	3	SF	0	F	LE,ER	
137	4	1	05		120	130		MMAMMAL	1	SF	0	F	SEW,LE,ER	
139	4	1	06		130	140		LMAMMAL	2	SF	1	F	SEW,LE,ER	
139	4	1	06		130	140		S/MMAMMAL	1	SKULL?	1	F	ER	
142	4	1	07		140	150		LMAMMAL	1	SF	0	G	LE	
142	4	1	07		140	150		M/LMAMMAL	2	SF	2	F	ER	
145	4	1	08		150	160		M/LMAMMAL	1	SF	1	F	LE	
145	4	1	08		150	160		MMAMMAL	1	SF	0	G		
145	4	1	08		150	160		SYLVILAGUS	1	HUMERUS	0	G		
147	4	1	09		160	170		ARTIO	2	DEWCLAW,MP	1	G		
147	4	1	09		160	170		LMAMMAL	3	SF	2	F	SEW	
103	4	2	02		10	20		LMAMMAL	2	RIB,SF	1	G		
103	4	2	02		10	20		SMAMMAL	1	SF	1	F		

Gallinas Springs LA1178 faunal rough sort, on all bones from 1987 NFS/CGI mitigation. Rough diagnosis by Jack B. Bertram

FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
104	4	2	03		20	30		ARTIO	1	SESS	0	G	CB	
104	4	2	03		20	30		S/MMAMMAL	4	SK,SH	2	F	CB	
107	4	2	04		30	40		ARTIO	3	CARP,SESS,TOE	1	G	LE	
107	4	2	04		30	40		LEPUS	1	CALCAN	0	G	CB	
107	4	2	04		30	40		LMAMMAL	4	SK,RIB	0	F	LE,ER	cut
107	4	2	04		30	40		SMAMMAL	1	SCAP?	0	G	LE	
111	4	2	05		40	50		LMAMMAL	6	SF	0	G	LE	
111	4	2	05		40	50		SYLVILAGUS	1	JAW	0	G		
115	4	2	06		50	60		LEPUS	2	INNOM	2	F	ER	
115	4	2	06		50	60		LMAMMAL	2	SF	1	F	LE	
115	4	2	06		50	60		SYLVILAGUS	1	INNOM	0	F	LE,CB	
120	4	2	07		60	70		ARTIO	1	RIB	0	G		cut
118	4	2	07		60	70		ARTIO	3	SESS,TOE	1	G	LE	
118	4	2	07		60	70		LMAMMAL	6	SF	2	F	LE	
120	4	2	07		60	70		MMAMMAL/BIRD	1	SF	0			AWL
152	4	2	08		0	0		ARTIO	3	MT,TOOTH	0	G		
152	4	2	08		0	0		LEPUS	2	MT,RIB	0		LE,CB	
152	4	2	08		0	0		MELEA	1	CMC	0			
152	4	2	08		0	0		MROD	1	HUMERUS	0	E		
152	4	2	08		0	0		not bone	3	ROCKS	0			
152	4	2	08		0	0		SYLVILAGUS	2	TIBIA	0	F	SEW,LE,ER	
152	4	2	08		0	0		THOMOMYS	1	MAND	0	G		
152	4	2	08		0	0		UNKNOWN	1	SKULL?	0	G	LE	
159	4	2	09		0	0		LBIRD	3	SK,INNOM,WING	0			
159	4	2	09		0	0		LEPUS	1	MC	0	F	LE	
159	4	2	09		0	0		LMAMMAL	29	SF	4	F,P	SEW,LE,ER,CB	
159	4	2	09		0	0		MBIRD	1	ULNA	0	G		
159	4	2	09		0	0		SYLVILAGUS	5	JAW,HIP,SHOULDER,LEG	0	F	LE,ER	
162	4	2	10/11		0	0		ARTIO	5	CARPAL,SESS,RIB,SF	0	F	LE	
162	4	2	10/11		0	0		not bone	2	ROCK	0			
162	4	2	10/11		0	0		S/MMAMMAL	1	SF	0	F	LE,CB	
162	4	2	10/11		0	0		SYLVILAGUS	2	PMAX,ULNA	0	F	SEW,LE	
165	4	2	11		0	0		ARTIO	1	PUBIS	0	F	SEW,LE,ER	
165	4	2	11		0	0		M/LMAMMAL	2	FR	0	F	SEW,LE,ER	

Gallinas Springs LA1178 faunal rough sort, on all bones from 1987 NFS/CGI mitigation. Rough diagnosis by Jack B. Bertram

FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
249	5	1	07		0	0		SYLVILAGUS	1	MAND	0	F	LE	
251	5	1	08		0	0		NEOTOMA	1	MAND	0	G	LE	
252	5	1	09		0	0	STRAT 1:SLUMP	ARTIO	1	VERT	0	F	LE	BABY
252	5	1	09		0	0	STRAT 1:SLUMP	NEOTOMA	1	INNOM	0	G	SC,CB	
252	5	1	09		0	0	STRAT 1:SLUMP	SYLVILAGUS	1	FEMUR	0	F	LE	BABY
206	5	2	03		0	0		LMAMMAL	1	SF	0	F	LE	
210	5	2	04		0	0		LMAMMAL	1	SF	1	F	LE,ER	
212	5	2	05		0	0		LBIRD	1	RAD	0	F	SEW,LE,ER,CB	
213	5	2	06		0	0		ARTIO	0	RIB	0		CB	

Gallinas Springs LA1178 faunal rough sort, on all bones from 1987 NFS/CGI mitigation. Rough diagnosis by Jack B. Bertram

FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
213	5	2	06		0	0		LMAMMAL	1	SKULL?	0			
216	5	2	07		0	0		LMAMMAL	1	PLATEY	0	G	RE	
216	5	2	07		0	0		SPASSER	1	TMT	0	F	LE,ER	
216	5	2	07		0	0		SYLVILAGUS	1	JAW	0	G		
219	5	2	08		0	0	FEATURE?	ARTIO	5	RIB,VERT	0	G	LE	BABY
219	5	2	08		0	0	FEATURE?	LAGOMORPH	1	FEMUR	0	F	LE,SC	BABY
219	5	2	08		0	0	FEATURE?	LMAMMAL	2	SF	0	F	LE,ER	
219	5	2	08		0	0	FEATURE?	not bone	2	ROCK	0			
219	5	2	08		0	0	FEATURE?	THOMOMYS	1	TIBIA	0	G	LE,SC	
225	5	2	09		0	0		ANTILOCAPRA	1	MAND	0	G		
225	5	2	09		0	0		ARTIO	13	SKULL,VERT,RIB	0	G	LE,CB	
225	5	2	09		0	0		not bone	2	ROCKS	0			
225	5	2	09		0	0		SBIRD	2	STERUM	0	G		
225	5	2	09		0	0		SYLVILAGUS	1	MAND	0	G		
225	5	2	09		0	0		UNKNOWN	1	FR	0	P	SEW,LE,ER	
230	5	2	10		0	0		ARTIO	2	VERT	0	G	LE	BABY
230	5	2	10		0	0		LAGOMORPH	1	SKULL FRAG	0	G	LE	
230	5	2	10		0	0		LBIRD	1	BEAK	0	F	LE,RE,ER	
230	5	2	10		0	0		LMAMMAL	3	SKULL? SH	3	F	LE,ER	
230	5	2	10		0	0		MROD	3	VERT,AUDITORY,HUM	0	F	LE,RE,ER,CB	
230	5	2	10		0	0		SBIRD	1	HUMERUS	0	E		
230	5	2	10		0	0		THOMOMYS	3	SKULL,MANDS	0	F	LE	
230	5	2	10		0	0		UNKNOWN	1	UNK	0	P	SEW,LE,RE,ER	
236	5	2	11		0	0		ARTIO	7	VERTS	0			BABY
236	5	2	11		0	0		LMAMMAL	3	RIB,SF	1	F	LE	
236	5	2	11		0	0		MROD	3	VERT	0	G		
236	5	2	11		0	0		not bone	1	BURNED DAUB	0			
236	5	2	11		0	0		SBIRD	2	PELVIS	0	F	CB	
236	5	2	11		0	0		SCRICETID	1	MAND	0	E		
236	5	2	11		0	0		S/MMAMMAL	1	RIB	0	G	CB	
236	5	2	11		0	0		SYLVILAGUS	2	INNOM,VERT	0	F	LE,ER	
256	5	2	12		0	0		ARTIO	4	SKULL,LEG,VERT,STERNUM	0		LE,ER	BABY
256	5	2	12		0	0		LMAMMAL	4	SF	0	F	LE,ER	
256	5	2	12		0	0		MROD	1	VERT	0	G		
256	5	2	12		0	0		not bone	0	CHERT FLAKE	0			
256	5	2	12		0	0		SRODENT	1	INNOM	0	G	CB	
259	5	2	13		0	0	FLOOR?	ARTIO	2	VT,MANUBR	0	F	LE,ER	LGIMM;flor
259	5	2	13		0	0	FLOOR?	LMAMMAL	1	PLATEY	0	G	RE	floor
259	5	2	13		0	0	FLOOR?	MROD	0	VERT	0	F	LE	floor
259	5	2	13		0	0	FLOOR?	SYLVILAGUS	1	INNOM	0	F	LE	floor
260	5	2	14		0	0	ON FLOOR?	MELEA	1	TIBIO TARS	0	G	CB	
204	5	9	0		0	10	strip of both units	ARTIO	2	STERNUM	0		SEW,LE,ER	
204	5	9	0		0	10	strip of both units	LMAMMAL	2	PLATEY	2	G	LE	
204	5	9	0		0	10	strip of both units	ZENAIDA	1	STERNUM	0	E		

Gallinas Springs LA1178 faunal rough sort, on all bones from 1937 NFS/CGI mitigation. Rough diagnosis by Jack B. Bertram

FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
503	6	1	03		0	0		M/LMAMMAL	1	RIB	0	F	LE,ER,CB	
560	6	1	06		0	0		ARTIO	4	CARP,ULNA,VERT	0	G	LE,RE,CB	
560	6	1	06		0	0		LEPUS	1	TOOTH	0	G	LE	
568	6	1	07		0	0		ARTIO	5	TOE,JAW	1	F	LE,ER	INCL. BABY
568	6	1	07		0	0		LMAMMAL	8	FR	0	P	SEW,LE,ER	
568	6	1	07		0	0		S/MMAMMAL	2	SF	2	G	LE	
572	6	1	08		0	0		ARTIO	6	SK	0	F	LE	BABY
572	6	1	08		0	0		LMAMMAL	1	MT	0	G	LE,CB	
577	6	1	09		0	0		ARTIO	4	TOE,RIB,DTOOTH	1	G	LE,CB	INCL. BABY
577	6	1	09		0	0		LMAMMAL	6	SKULL	0	P	SEW,LE,RE,ER	
578	6	1	10		0	0		ARTIO	2	TOOTH,TOE	1	F	LE,ER	
578	6	1	10		0	0		LMAMMAL	2	SF	1		LE,CB	
578	6	1	10		0	0		SYLVILAGUS	2	MAX,TIB	1	F	ER	
584	6	1	11		0	0		LEPUS	1	CALCAN	1	G		
584	6	1	11		0	0		LMAMMAL	1	SF	0	G	LE	
584	6	1	11		0	0		MROD	1	ULNA	1	F	LE,ER	
506	6	1	6?		120	130		S/MMAMMAL	1	SF	1	F	LE,CB	
553	6	2			0	0	WALL FILL L 1-12	ARTIO	1	CARPAL	1	G	LE	wall
553	6	2			0	0	WALL FILL L 1-12	LMAMMAL	1	SF	0	P	SEW,LE,RE,ER	wall
553	6	2			0	0	WALL FILL L 1-12	not bone	1	STONE	0			wall
553	6	2			0	0	WALL FILL L 1-12	SYLVILAGUS	2	MT,JAW	0	G		wall
510	6	2	03		0	0		M/LMAMMAL	1	PLATEY	0	P	SEW,LE,ER	
512	6	2	04		0	0		LMAMMAL	1	FLAKE	0	G	LE,CB	
516	6	2	06		0	0		LMAMMAL	2	SK,FR	0	G	LE,ER	
518	6	2	07		0	0		LMAMMAL	1	SF	1		LE,CB	
518	6	2	07		0	0		NEOTOMA	1	MAND-	0	F	LE,ER	
518	6	2	07		0	0		SYLVILAGUS	1	TIB	1	G	LE	
518	6	2	07		0	0		THOMOMYS	1	INNOM	0	E		
521	6	2	08		0	0		LBIRD	1	FEMUR	0	G		cut artif
521	6	2	08		0	0		LMAMMAL	3	F	1	F	LE	
521	6	2	08		0	0		M/LMAMMAL	3	SF	0		SEW,LE,ER,CB	
521	6	2	08		0	0		not bone	2	ROCK,SHERD?	0			
525	6	2	09		0	0		LMAMMAL	12	RIB?	0	P	SEW;LE,ER	
525	6	2	09		0	0		SRODENT	1	FEMUR	0		LE,CB	
525	6	2	09		0	0		SYLVILAGUS	3	RAD,ULNA,PMAX	0	F	LE,ER	
531	6	2	10		0	0		LMAMMAL	1	PLATEY	0	G	LE	
531	6	2	10		0	0		SYLVILAGUS	1	TIBIA	0		CB	ROD.GNAWED
528	6	2	10		0	0		LEPUS	1	HUMERUS	0	G	CB	F3
528	6	2	10		0	0		not bone	1	ROCK?	0			f3
533	6	2	11		0	0		ARTIO	1	XIPHO	0	G	LE	f3
533	6	2	11		0	0		SYLVILAGUS	1	MT	0	G		f3
543	6	2	11		0	0		ARTIO	1	RAD	0	G	LE,RE	f4
543	6	2	11		0	0		SYLVILAGUS	2	INNOM,CALC	1	F	LE,RE,ER	f4
545	6	2	12		0	0		LEPUS	1	FEM	0	F		ROD.GN.f3
545	6	2	12		0	0		LMAMMAL	6	SKULL,RIB,LB,VERT	1	F	SEW,LE	f3
545	6	2	12		0	0		not bone	4	ROOT,ROCK	0			f3
545	6	2	12		0	0		S/MMAMMAL	5	SF	2	F	LE,SC	f3
545	6	2	12		0	0		SYLVILAGUS	2	ULNA,MT	0	G		f3
548	6	2	12		0	0		M/LMAMMAL	3	FR	0	F	SEW,LE,ER	f4
548	6	2	12		0	0		SYLVILAGUS	1	MC	0	E	SC	f4

Gallinas Springs LA1178 faunal rough sort, on all bones from 1987 NFS/CGI mitigation. Rough diagnosis by Jack B. Bertram

FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
543	6	2	12		0	0		THOMOMYS	1	MAND	0	F	LE,RE,ER	f4
550	6	2	13		0	0		ARTIO	1	RIB	1	G	LE	f3
550	6	2	13		0	0		LEPUS	0	TIBIA	0	G	CB	f3
550	6	2	13		0	0		SYLVILAGUS	1	HUMERUS	0	E		f3
558	6	2	13		0	0		LMAMMAL	1	SF	0	F	LE,ER	f4
558	6	2	13		0	0		NEOTOMA	1	SK	0	E		f4
558	6	2	13		0	0		S/MMAMMAL	1	SF	0	F	LE,RE,ER,CB	f4
558	6	2	13		0	0		SYLVILAGUS	1	CALCAN	1	G	LE	f4
563	6	2	14		0	0		LMAMMAL	1	SF	0	G	LE	artif,cut
566	6	2	15		0	0		LEPUS	1	MAND	0			
566	6	2	15		0	0		M/LMAMMAL	1	RIB OR MAND	0	G		
566	6	2	15		0	0		not bone	0	MACROBOT	0			
534	6	2	16		0	0		MMAMMAL/BIRD	1	S	0	F	LE	BABY
541	6	2	8-9		0	0		LMAMMAL	1	FLAKE	0	G		f3.1

Gallinas Springs LA1178 faunal rough sort, on all bones from 1987 NFS/CGI mitigation. Rough diagnosis by Jack B. Bertram

FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
602	7	1	0		0	0	SURFACE	ARTIO	1	PHAL	0			
652	7	1	01	A	0	0	SLUMP	LEPUS	2	VERT,RAD	0	F	LE,ER	
652	7	1	01	A	0	0	SLUMP	LMAMMAL	2	VERT,SF	2	F	LE	
652	7	1	01	A	0	0	SLUMP	MMAMMAL	4	SF	0	P	SEW,LE,ER,CB	
652	7	1	01	A	0	0	SLUMP	SYLVILAGUS	1	FEMUR	0	F	LE,ER	
675	7	1	02	A	0	0	SLUMP	LMAMMAL	6	SF	4	P	SEW,LE,ER,CB	
675	7	1	02	A	0	0	SLUMP	THOMOMYS	2	SK,MAN	0	F	LE,CB	
604	7	1	1,2,3		0	0		ARTIO	1	PHAL	0	G	CB	
604	7	1	1,2,3		0	0		LMAMMAL	10	RIB,SF	0	F	SEW,LE,ER,CB	
604	7	1	1,2,3		0	0		MBIRD	2	SF,ULNA	0	F	LE,CB	
604	7	1	1,2,3		0	0		not bone	4	WOOD,DIRT	0			
604	7	1	1,2,3		0	0		UNKNOWN	4	F	1	P	SEW,LE,ER	
608	7	1	4,5,6		0	0		ARTIO	1	MC	0	F	LE	
607	7	1	4,5,6		105	135		HOMO	1	TOOTH	0	F	LE,ER,CB	
608	7	1	4,5,6		0	0		MMAMMAL/BIRD	7	SF,INNOM	3	P	LE,ER,CB	
608	7	1	4,5,6		0	0		not bone	3	CHARCOAL,ADOBE	3	F		
649	7	2	0		0	0		LMAMMAL	8	SF,PLATEY	3	P	LE,ER	
660	7	2	0		0	0		MMAMMAL	1	SF	1	F		
619	7	2	0	A	0	0		LMAMMAL	5	SF,VERT	0	P	LE,ER,CB	
623	7	2	05		0	0		LMAMMAL	2	SF	2	F	LE,ER	
623	7	2	05		0	0		not bone	1	CHARCOAL	1			
617	7	2	05	A	0	0		LEPUS	3	MAND	0	F	LE,CB	
617	7	2	05	A	0	0		LMAMMAL	7	VERT,PLATEY	0	F	LE,ER,CB	
617	7	2	05	A	0	0		not bone	2	WOOD	2	P		artif?
625	7	2	06		0	0		LAGOMORPH	1	RIB	1	F	LE	
632	7	2	07		0	0	FL FILL - FL CONTACT	LMAMMAL	6	SF,TOOTH	0	P	SEW,LE,RE,ER,CB	f5 artif
632	7	2	07		0	0	FL FILL - FL CONTACT	MROD	1	VERT	0	G	CB	f5
639	7	2	07		0	0	FLOOR SWEEPINGS	LMAMMAL	9	SF	3	F	LE,ER,CB	f5
639	7	2	07		0	0	FLOOR SWEEPINGS	SYLVILAGUS	1	MT	0	G	CB	f5
636	7	2	07		0	0	FLOOR CONTACT	ARTIO	8	RIB,TIBIA	0	P	SEW,LE,ER,CB	floor

Gallinas Springs LA1178 faunal rough sort, on all bones from 1987 NFS/CGI mitigation. Rough diagnosis by Jack B. Bertram

FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
644	7	2	07	A	0	0	"FLOOR TILES"	not bone	2	CHARCOAL	0			f5?
649	7	2	08		0	0		not bone	5	CHARCOAL	5	P		
656	7	2	09		0	0		ARTIO	3	MT	0	P	LE,ER	
660	7	2	09		0	0		LAGOMORPH	1	SKULL	1	F	LE	
660	7	2	09		0	0		LBIRD	1	RIB	1	F	LE,ER,CB	cut
660	7	2	09		0	0		LEPUS	1	MC	0	G	LE,CB	
660	7	2	09		0	0		LMAMMAL	10	SF	4	P	SEW,LE,ER,CB	
660	7	2	09		0	0		not bone	1	CHARCOAL	1	P		
663	7	2	09		0	0	SECOND BAG	LMAMMAL	4	SF	1	P	LE,ER,CB	
657	7	2	09		0	0	IN SLAB-LINED HEARTH	ARTIO	1	LUMBAR VT.	0	P	LE,ER,CB	feature?
672	7	2	10		0	0		LMAMMAL	9	SF	3	P	LE,ER	
672	7	2	10		0	0		not bone	1	STONE	0			
672	7	2	10		0	0		SYLVILAGUS	2	RAD,VERT	2	F		
614	7	2	1234		0	0		LMAMMAL	13	SCAP,SF	5	F	LE,ER,CB	cut

Gallinas Springs LA1178 faunal rough sort, on all bones from 1987 NFS/CGI mitigation. Rough diagnosis by Jack B. Bertram

FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
703	8	1	0		0	0		LEPUS	1	TIBIA	0	G	LE,CB	
712	8	1	01		0	0		ARTIO	1	PATELLA	0	F	LE,ER,CB	
712	8	1	01		0	0		CANID	1	VERT	0	G		
712	8	1	01		0	0		LEPUS	2	INNOM	0	F	SEW,LE,ER,CB	
712	8	1	01		0	0		LMAMMAL	10	SF	4	F	LE	
712	8	1	01		0	0		MMAMMAL	1	PATELLA	0	G	LE,CB	
712	8	1	01		0	0		MMAMMAL/BIRD	11	SF	4	F	SEW,LE,ER,CB	
712	8	1	01		0	0		not bone	1	CERAMIC	0			
712	8	1	01		0	0		SBIRD	1	ACET	0	F	LE,ER	
712	8	1	01		0	0		S/MMAMMAL	1	SKULL FRAG	0	F	SEW,LE,ER,CB	
712	8	1	01		0	0		S/MMAMMAL	1	SF	0	F	SEW,LE,ER	artifact
712	8	1	01		0	0		SYLVILAGUS	5	RAD,SCAP,MT	0	F	SEW,LE,RE,ER,CB	
724	8	1	02		0	0		ARTIO	11	MP,RIB,VERT,SF	0	G	LE,ER,CB	
724	8	1	02		0	0		HERP	1	VERT	0	G		
724	8	1	02		0	0		LBIRD	3	PELV	0	G	LE	
724	8	1	02		0	0		LEPUS	4	VERT,HUM,SCAP	0	G	LE,CB	
724	8	1	02		0	0		M/LMAMMAL	27	SF	5	F	LE,ER	
724	8	1	02		0	0		MROD	1	SCAP	0	F	LE,ER,CB	
724	8	1	02		0	0		NEOTOMA	1	MAX	0	G	LE	
724	8	1	02		0	0		not bone	1	CHARCOAL	1			
724	8	1	02		0	0		SBIRD	1	STERN	0	F	LE,ER	
724	8	1	02		0	0		S/MMAMMAL	27	SF,PLATEY	4	P	LE,ER,CB	
724	8	1	02		0	0		SRODENT	1	TIBIA	0	F	LE,ER	
724	8	1	02		0	0		SYLVILAGUS	12	RAD,TIB,MC,FEM,TOE	3	F	LE,ER,CB	
725	8	1	03		0	0		M/LMAMMAL	3	SF	1	P	SEW,LE,ER	
725	8	1	03		0	0		not bone	1	CERAMIC	0			
725	8	1	03		0	0		SYLVILAGUS	2	HUM	0	F	LE,CB	
731	8	1	04		0	0		ARTIO	2	RAD,TOE	0	G	LE	
731	8	1	04		0	0		LEPUS	1	SKULL	0	F	LE,ER,CB	
731	8	1	04		0	0		LMAMMAL	3	RIB,SF	0	F	LE,ER	

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FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
731	8	1	04		0	0		S/MMAMMAL	5	SF,PLATEY	0	F	LE,ER,CB	
731	8	1	04		0	0		SYLVILAGUS	1	RAD	0	F	CB	
734	8	1	05		0	0		ARTIO	5	ASTRA,RIB,ULNA,VERT,TOOTH	0	G	CB	
734	8	1	05		0	0		NEOTOMA	1	MAND	0	F	ER	
734	8	1	05		0	0		not bone	3	CERAMIC,STONE	0			
734	8	1	05		0	0		S/MMAMMAL	17	SF	3	F	LE,ER,CB	
734	8	1	05		0	0		SYLVILAGUS	2	TEMP	1	F	LE,ER,CB	
737	8	1	06		0	0		ARTIO	5	RIB,HUM,TOE	0	G	LE,CB	cut,gnaw
737	8	1	06		0	0		LBIRD	1	TMT	1	F	CB	gnaw
737	8	1	06		0	0		LEPUS	1	CALCAN	0	G	CB	
737	8	1	06		0	0		LMAMMAL	10	SF	2	F	LE,ER,CB	gnaw
737	8	1	06		0	0		S/MMAMMAL	11	SF	0	F	LE,ER,SC,CB	gnaw
737	8	1	06		0	0		SYLVILAGUS	3	HAM,TOE,VERT	0	F	LE,CB	
741	8	1	07		0	0		ARTIO	13	SKULL,RIB,TOE,SF	4	F	CB	
741	8	1	07		0	0		HOMO	1	RIB	0	G	CB	cut
741	8	1	07		0	0		LEPUS	6	MT,TARS,INNOM,SKULL	1	G	CB	
741	8	1	07		0	0		MELEA	2	CARPAL,TOE	0	G	CB	
741	8	1	07		0	0		M/LMAMMAL	3	SF	0	F	LE,CB	
741	8	1	07		0	0		S/MMAMMAL	35	FR	12	F	LE,CB	
741	8	1	07		0	0		SYLVILAGUS	23	MOST	4	G	LE,CB	
748	8	1	08		0	0		ANTILOCAPRA	3	SKULL	0	F	CB	INCL.BABY
748	8	1	08		0	0		ARTIO	2	FEMUR,CARPAL	0	G		
748	8	1	08		0	0		LBIRD	2	SF	0	F	SEW,LE,RE,ER	
748	8	1	08		0	0		LMAMMAL	5	SF,RIB	3	F	LE,ER,CB	
748	8	1	08		0	0		SBIRD	1	STERNUM	0	F	LE,ER,CB	
748	8	1	08		0	0		S/MMAMMAL	14	SF	4	F	LE,ER,CB	
748	8	1	08		0	0		SYLVILAGUS	4	TIBIA,TOE,TOOTH,CANDAL	0	G	LE,CB	
748	8	1	08		0	0		THOMOMYS	1	TIBIA	0	G		
751	8	1	09		0	0		M/LMAMMAL	5	SF	0		LE,ER,CB	
751	8	1	09		0	0		not bone	1	ROCK	0			
751	8	1	09		0	0		S/MMAMMAL	2	SF	0	F	LE,ER,CB	
751	8	1	09		0	0		SYLVILAGUS	2	SK,VERT	1	F	LE	
754	8	1	10		0	0		ARTIO	1	MP	0	G	LE,ER,CB	
754	8	1	10		0	0		LMAMMAL	1	SF	0	F	LE,CB	
754	8	1	10		0	0		THOMOMYS	7	SK,HUM,FEM,MAND	0	F	LE,SC	
745	8	1	5&6		0	0		ARTIO	2	STERN,TOOTH	0	F	LE,ER	
745	8	1	5&6		0	0		LMAMMAL	1	CANCEL	0	F	LE,RE,ER,SC	
745	8	1	5&6		0	0		SMAMMAL	1	SKULL	0	F	LE,ER	
1603	8	2			0	0	STRAT 2 LOWER	ARTIO	1	HUMERUS	0	G	LE,CB	in profile
707	8	2	01		0	0		ARTIO	6	HUM,ULNA,STERNUM,PMAX	0	G	LE,CB	INCL. BABY
707	8	2	01		0	0		LBIRD	2	RIB,TOE	0	G	LE,CB	
707	8	2	01		0	0		LEPUS	2	MT,VERT	0	F	LE,ER	
707	8	2	01		0	0		LMAMMAL	11	SF	2	P	SEW,LE,ER	
707	8	2	01		0	0		MMAMMAL/BIRD	7	SF	2	F	LE,CB	
707	8	2	01		0	0		not bone	1	CHARCOAL	1			
707	8	2	01		0	0		SYLVILAGUS	3	MAND,STERN	0	F	LE,ER,CB	
707	8	2	01		0	0		THOMOMYS	1	FRONTAL	0	G		
717	8	2	02		0	0		ARTIO	13	RIB,TIB,TOE,STERNUM	0	F	LE,CB	INCL. BABY
717	8	2	02		0	0		CYNOMYS	2	VERT,TOOTH	0	G	CB	
717	8	2	02		0	0		LBIRD	1	RIB	0	F	CB	

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FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
717	8	2	02		0	0		LEPUS	5	TIB,FEM,TOE,VERT	0	G	LE,CB	
717	8	2	02		0	0		LMAMMAL	12	SF	3	F	SEW,LE,CB	
717	8	2	02		0	0		NEOTOMA	2	TEETH	0	G		
717	8	2	02		0	0		SBIRD	2	CORACOID,SACRATE	0	F	LE,ER,CB	
717	8	2	02		0	0		S/MMAMMAL	45	TOE,SF,PLATEY	6	F	LE,ER,CB	
717	8	2	02		0	0		SRODENT	0	JAW	0	F	LE,ER	
717	8	2	02		0	0		SYLVILAGUS	5	JAW,HUM,TIB	0	G	CB	
757	8	2	03		0	0		LEPUS	1	FRONTAL	0	G		
760	8	2	04		0	0		ARTIO	1	MAND	0	F	CB	cut
763	8	2	05		0	0		ARTIO	2	PETROUS,VERT	0	F	LE	
763	8	2	05		0	0		S/MMAMMAL	3	SF,CANCELLA	0	F	LE,ER,CB	
763	8	2	05		0	0		SYLVILAGUS	2	RAD,ULNA	0	F	LE,CB	
765	8	2	06		0	0		LMAMMAL	2	SF	0	G	LE	
765	8	2	06		0	0		MBIRD	9	HUM,TBT,VERT,INNOM,FURC	0	F	LE	
765	8	2	06		0	0		not bone	1	ROCK	0			
765	8	2	06		0	0		SRODENT	1	TIBIA	0	F	LE,ER	
765	8	2	06		0	0		UNKNOWN	1	RIB?	0	F	LE,ER,SC,CK	
769	8	2	07		0	0		ARTIO	9	VT,RIB,TOE,TOOTH,SF	0	F	LE,ER,CB	
769	8	2	07		0	0		LBIRD	6	CORAC,CMC,STER,PHAL,SF,TO	1	F	LE,ER,SC,CK,CB	
769	8	2	07		0	0		LEPUS	3	VT,FEM,MC	0	G	LE,ER,CB	
769	8	2	07		0	0		SBIRD	1	ULNA	0	G	SC	
769	8	2	07		0	0		S/MMAMMAL	9	SF,PLATEY	2	F	LE,ER,CB	
769	8	2	07		0	0		SYLVILAGUS	2	MT,HUM	0	F	LE,ER,CB	
769	8	2	07		0	0		THOMOMYS	1	MAND	0	F	ER,SC	
774	8	2	08		0	0		ARTIO	1	TIBIA	1	F	LE,ER,CB	
774	8	2	08		0	0		LMAMMAL	4	SF,PLATEY	2	F	LE,ER,CB	
774	8	2	08		0	0		NEOTOMA	1	MAND	0	F	LE,ER	
774	8	2	08		0	0		not bone	1	ROCK	0			
774	8	2	08		0	0		S/MMAMMAL	8	SF,SKULL,FR,PLATEY	0	P	LE,ER,SC,CB	
774	8	2	08		0	0		SYLVILAGUS	6	FEM,HUM,MT,SKULL,VT	0	G	LE,CB	
784	8	2	09		0	0		ARTIO	2	TOOTH,MT	0	F	LE,SC	
784	8	2	09		0	0		C.ARTIO	10	RIB	0	G	LE	cut
784	8	2	09		0	0		DIPO	1	TIB	0	E		
784	8	2	09		0	0		LBIRD	1	TMT	0	F	LE,ER,CB	
784	8	2	09		0	0		LEPUS	7	NASAL,HUM,TIB,MT	2	F	LE,CB	
784	8	2	09		0	0		LMAMMAL	3	SF	1	F	LE,ER	
784	8	2	09		0	0		MCARN	4	MC,VERT	0	G	LE	
784	8	2	09		0	0		not bone	2	CERAMIC	0			
784	8	2	09		0	0		S/MMAMMAL	21	SF	4	F	LE,ER,CB	gnaw
784	8	2	09		0	0		SYLVILAGUS	8	FEM,ULNA,SAP,SKULL,TIB	0	F	LE,ER,CB	
788	8	2	10		0	0		ARTIO	2	RIB	0		LE,ER	
788	8	2	10		0	0		DIPO	1	INNOM	0	F	LE,SC,CB	
788	8	2	10		0	0		LEPUS	1	TIBIA	0	G	LE,CB	
788	8	2	10		0	0		LMAMMAL	7	SF,RIB	4	F	LE,ER,CB	
788	8	2	10		0	0		MROD	1	SCAP	0	F	LE,SC,CB	
788	8	2	10		0	0		ODOCOILEUS	1	TOE	0	F	LE,RE,ER	
788	8	2	10		0	0		SBIRD?	1	TIBIOFARS?	0	G	CB	
788	8	2	10		0	0		SCRICETID	1	MAND	0	F	LE,ER	
788	8	2	10		0	0		S/MMAMMAL	10	SF,PLATEY	5	F	LE,ER,SC,CB	
788	8	2	10		0	0		SYLVILAGUS	2	TIBIA,RIB	0	F	LE,ER,CB	

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FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
792	8	2	11		0	0		ARTIO	4	SESS,MT,OCCIP	0	F	SEW,LE,ER,CB	
792	8	2	11		0	0		LEPUS	7	HUM,FOOT	0	F	LE,ER,CB	
792	8	2	11		0	0		M/LMAMMAL	21		4	F	LE,ER,CB	
792	8	2	11		0	0		SMAMMAL/BIRD	1	UNKNOWN	0	G		NOT KNOWN
792	8	2	11		0	0		SYLVILAGUS	6	SCAP,VT	0	F	LE,CB	
795	8	2	12		0	0		LEPUS	1	VT	0	F	LE,CB	
795	8	2	12		0	0		LMAMMAL	8	RIB,SF,PLATEY	3	F	LE	
795	8	2	12		0	0		not bone	3	ROCK	0			
795	8	2	12		0	0		SYLVILAGUS	4	VT,SKULL	0			
798	8	2	13		0	0		ARTIO	1	MP	0	F	LE,ER,CB	
798	8	2	13		0	0		LMAMMAL	1	PLATEY	0	F	LE,RE,ER	
798	8	2	13		0	0		S/MMAMMAL	4	SF,PLATEY	2	F	LE,RE,ER,SC,CB	
2701	8	2	14		0	0		LMAMMAL	4	SF,SKULL	1	F	LE,ER,CB	
2701	8	2	14		0	0		SYLVILAGUS	1	MAND	0	F	LE	
780	8	2	27		0	0		M/LMAMMAL	1	SF	0	F	LE,ER,CB	

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FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
1001	8a	1	01		0	0	SLUMP	LMAMMAL	8	SF	3	P	SEW,LE,ER,CB	
1001	8a	1	01		0	0	SLUMP	S/MMAMMAL	1	SF	0	E		
1001	8a	1	01		0	0	SLUMP	SYLVILAGUS	1	INNOM	0	E		
1007	8a	1	04		0	0		LEPUS	0		0	G	LE,CB	
1007	8a	1	04		0	0		THOMOMYS	1	MAX	0	F	LE,ER,SC	
1010	8a	1	05		0	0		ARTIO	1	CANDAL	0	G	LE	
1010	8a	1	05		0	0		MMAMMAL	2	SF,VERT	0	E		
1012	8a	1	06		0	0		ARTIO	5	TARSALS,AUDITORY,RIB	0	F	LE,ER,CB	
1012	8a	1	06		0	0		LEPUS	2	TIBIA,PARIETAL	0	G	LE	
1012	8a	1	06		0	0		MMAMMAL	1	SF	0	G		
1012	8a	1	06		0	0		not bone	3	ROCK	0			
1012	8a	1	06		0	0		SYLVILAGUS	1	MAND	0	G		
1012	8a	1	06		0	0		THOMOMYS	1	MAND	0	F	ER	
1015	8a	1	07		0	0		LMAMMAL	1	SF	1	G		
1015	8a	1	07		0	0		MELEA	1	VERT	0	F	LE	
1015	8a	1	07		0	0		not bone	3	ROCK	0			
1015	8a	1	07		0	0		SYLVILAGUS	1	TIBIA	0	G	ER	
1018	8a	1	08	N	0	0		ARTIO	1	OCCIP	0	F	LE,CB	
1018	8a	1	08	N	0	0		LEPUS	1	MAND	1	G	LE,CB	
1018	8a	1	08	N	0	0		LMAMMAL	2	SF	0	F	LE,ER	
1018	8a	1	08	N	0	0		S/MMAMMAL	2	SF	0	F	LE,CB	
1018	8a	1	08	N	0	0		SYLVILAGUS	3	INNOM,SCAP,MT	0	G	LE,CB	
1022	8a	2	01		0	0	SLUMP	ARTIO	2	SCAP,MT	0	F	LE,RE,ER	
1022	8a	2	01		0	0	SLUMP	SYLVILAGUS	1	MAND	0	F	LE,ER	
1042	8a	2	06	S	0	0		LEPUS	0	HUMERUS,VERT	0	G		gnaw
1042	8a	2	06	S	0	0		LMAMMAL	2	SF,PLATEY	0	F	LE,ER,CB	
1042	8a	2	06	S	0	0		ODOCOILEUS	1	CALCAN	0	E		
1042	8a	2	06	S	0	0		SYLVILAGUS	2	FRONTAL,FEMUR	0	F	LE,SC,CB	

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FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
1028	8a	2	07	N	0	0		LMAMMAL	1	SF	0	P	SEW,LE,ER,CB	
1028	8a	2	07	N	0	0		SMAMMAL	3	SF	1	F	LE,ER,SC,CB	
1028	8a	2	07	N	0	0		SYLVILAGUS	1	MAX	0	F	LE,ER,CB	
1028	8a	2	07	N	0	0		THOMOMYS	1	MAND	0	P	LE,ER,SC	
1046	8a	2	07	S	0	0		S/MMAMMAL	2	SF	2	G		
1046	8a	2	07	S	0	0		SYLVILAGUS	1	RIB	0	G	LE	
1046	8a	2	07	S	0	0		UNKNOWN	1	PLATEY	0	F	LE,ER	
1032	8a	2	08	N	0	0		ARTIO	4	SK,RIB,FOOT	1	G	LE,ER,CB	
1032	8a	2	08	N	0	0		LEPUS	2	VERT,RIB	0	G	LE,CB	
1032	8a	2	08	N	0	0		LMAMMAL	4	SF	0	P	SEW,LE,RE,ER	
1032	8a	2	08	N	0	0		S/MMAMMAL	1	SF	0	F	LE	
1032	8a	2	08	N	0	0		SYLVILAGUS	7	SK,FOOT,HUM,VERT	0	F	LE,ER	
1035	8a	2	09	N	0	0		CHARADRIFORM	1	MD2P1	0	G	ER	
1035	8a	2	09	N	0	0		LMAMMAL	1	RIB	0	P	SEW,LE,RE,ER	
1035	8a	2	09	N	0	0		M/LMAMMAL	1	SF	0	F	LE,SC,CB	
1035	8a	2	09	N	0	0		SYLVILAGUS	1	INNOM	0	G		
1049	8a	2	10		0	0		LMAMMAL	1	SF	0	P	SEW,LE,ER	
1051	8a	2	10		0	0		S/MMAMMAL	1	SF	0	G		
1054	8a	2	11		0	0		ARTIO	1	MAX	0	G	LE,RE	
1057	8a	2	12		0	0		SYLVILAGUS	1	FEM	0	F	LE,ER	
1039	8a	2	4&5	S	0	0		ARTIO	9	RIB,FEM,SESS,CARP,SF	2	G	LE,ER,CB	INCL. BABY

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FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
351	9	1	02		0	0		ARTIO	1	TOOTH	0	G	ER	
351	9	1	02		0	0		LMAMMAL	3	SF	0	F	LE,ER,CB	
351	9	1	02		0	0		not bone	1	ROCK	0			
351	9	1	02		0	0		SCRICETID	1	INNOM	0	E		
351	9	1	02		0	0		SMAMMAL	1	RIB	0	F	SC	
351	9	1	02		0	0		S/MMAMMAL	2	SF	0	F	LE,ER	
311	9	2	02		0	0		LMAMMAL	1	SF	0	P	SEW,LE,RE,ER	
319	9	2	03		0	0		LEPUS	1	MT	0	E		
319	9	2	03		0	0		S/MMAMMAL	2	PLATEY	0	F	LE,ER	
319	9	2	03		0	0		SYLVILAGUS	1	SCAP	0	G	LE	
319	9	2	03		0	0		THOMOMYS	1	INNOM	0	F	ER,SC	
323	9	2	04		0	0		ARTIO	1	SESSAMOID	0	F	LE	
323	9	2	04		0	0		LMAMMAL	5	SF	2	F	LE,ER	
323	9	2	04		0	0		not bone	3	ROCK	0			
323	9	2	04		0	0		S/MMAMMAL	3	SF	0	F	LE,ER	
323	9	2	04		0	0		SYLVILAGUS	8	HIP,TIB,FOOT,STER,SKULL	0	F	LE,ER,CB	
338	9	2	05		0	0		ARTIO	1	CARPAL	0	G	LE	
338	9	2	05		0	0		CYNOMYS	1	JAW	0	G	LE	
338	9	2	05		0	0		LEPUS	1	ILIUM	0	G		SCRAPER
338	9	2	05		0	0		LMAMMAL	5	SF,CANCELLA	0	F	LE,ER,CB	
338	9	2	05		0	0		SYLVILAGUS	0	FEMUR	0	E		
338	9	2	05		0	0		UNKNOWN	2	PLATEY	0	F	CB	
344	9	2	06		0	0		ARTIO	2	VERT	0	F	CB	

Gallinas Springs LA1178 faunal rough sort, on all bones from 1987 NFS/CGI mitigation. Rough diagnosis by Jack B. Bertram

FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
344	9	2	06		0	0		LBIRD	1	TIBIOTARSUS	0	G	CB	
344	9	2	06		0	0		LEPUS	2	FOOT	0	F	LE,ER	
344	9	2	06		0	0		LMAMMAL	3	SF	1	F	LE,RE,ER	
344	9	2	06		0	0		NEOTOMA	2	MAND	0	G	LE	
344	9	2	06		0	0		S/MMAMMAL	10	SF	0	F	SEW,LE,ER,CB	
344	9	2	06		0	0		SYLVILAGUS	8	JAW,HIP,LEG,FOOT.	0		LE,RE,ER,CB	
355	9	2	07		0	0		ARTIO	1	INNOM	0	G	LE,RE,ER	
356	9	2	07		0	0		LMAMMAL	3	SF,RIB	1	F	LE,ER	
356	9	2	07		0	0		MMAMMAL/BIRD	1	SF	0	F	LE	
356	9	2	07		0	0		SYLVILAGUS	2	FEMUR,VERT	0	G	RE	
356	9	2	07		0	0		THOMOMYS	2	MAND	0	F	LE,ER,SC	
301	9	3	0		0	0		SYLVILAGUS	1	FEMUR	0	F	SEW	
304	9	3	01		0	0		UNKNOWN	3	SF	0	P	SEW,LE,RE,ER	
310	9	3	02		0	0		MMAMMAL	2	SF	0	G	LE	
310	9	3	02		0	0		SYLVILAGUS	1	SCAP	0	G	LE	
316	9	3	03		0	0		ARTIO	1	TOOTH	0	F	LE	
330	9	3	03		0	0		ARTIO	1	TIBIA	0	G		
316	9	3	03		0	0		LMAMMAL	1	SF	0	F	LE,ER	
330	9	3	03		0	0		LMAMMAL	1	SF	0	G	LE,CB	
330	9	3	03		0	0		MMAMMAL	1	PLATEY	0	G	LE,CB	
330	9	3	03		0	0		not bone	2	ROCK	0			
330	9	3	03		0	0		SRODENT	2	ULNA	0	G		
316	9	3	03		0	0		SYLVILAGUS	1	SCAP	0	G	LE	
363	9	3	03		0	0	PEDESTAL	LBIRD(MELEA?	1	PMAX	0	F	LE,ER	
322	9	3	04		0	0		ARTIO	1	PHAL	0	G	LE	
322	9	3	04		0	0		LMAMMAL	1	SF	0	F	LE,ER	
322	9	3	04		0	0		SMAMMAL	1	SF	0		LE,ER,SC	
322	9	3	04		0	0		SYLVILAGUS	1	CALCAN	0	F	LE,ER	
366	9	3	04		0	0	PEDESTAL	LMAMMAL	1	SF	0	F	LE,ER	
366	9	3	04		0	0	PEDESTAL	SYLVILAGUS	3	FEMUR,ULNA	0	G	LE,CB	
334	9	3	04		0	0	UNDER JUMBLE	ARTIO	2	TIBIA EPI,MALLEO	0	F	LE,CB	
334	9	3	04		0	0	UNDER JUMBLE	LBIRD	1	STERNUM,RADIUS	0	F	LE,ER,SC,CB	
334	9	3	04		0	0	UNDER JUMBLE	LEPUS	1	INNOM	0	G		
334	9	3	04		0	0	UNDER JUMBLE	LMAMMAL	6	SF	2	F	SEW,LE,ER	
334	9	3	04		0	0	UNDER JUMBLE	NEOTOMA	1	MAND	0	F	LE,ER	
334	9	3	04		0	0	UNDER JUMBLE	not bone	4	ROCK,UNKNOWN	0			
334	9	3	04		0	0	UNDER JUMBLE	S/MMAMMAL	6	SF,CANCELLA	0	F	LE,ER,CB	
340	9	3	05		0	0		ARTIO	1	TOE	1	F	LE,ER,CB	
340	9	3	05		0	0		LEPUS	4	ULNA,RIB	0	F	LE,ER,CB	
340	9	3	05		0	0		not bone	3	ROCK,CHARCOAL	0			
340	9	3	05		0	0		S/MMAMMAL	8	SF,PLATEY	3	F	LE,CB	
340	9	3	05		0	0		SYLVILAGUS	11	SKULL,MAND,TIB,TOE,FEM	0	F	LE,ER,CK,CB	
340	9	3	05		0	0		VLM	1	SF	0	G		
369	9	3	05		0	0	PEDESTAL	ARTIO	1	TOE	0	G	LE,RE	
369	9	3	05		0	0	PEDESTAL	LEPUS	1	RADIUS	0	G		
369	9	3	05		0	0	PEDESTAL	S/MMAMMAL	1	SKULL	0	F	LE,ER,CB	
360	9	3	06		0	0		ANTILOCAPRA	1	MAND	0	G	LE	
352	9	3	06		0	0		ARTIO	2	RIB,TOE	0	G	LE	
352	9	3	06		0	0		LEPUS	2	VERT,ASTRAG	0			
352	9	3	06		0	0		LMAMMAL	15	SF	2	F	LE,ER,CK	

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FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
352	9	3	06		0	0		MICROTUS	1	MAND	0	F	ER	
352	9	3	06		0	0		NEOTOMA	4	MAND,FEMUR	0	G	SC,CB	
352	9	3	06		0	0		not bone	3	CLAY?,ROCK	0			
352	9	3	06		0	0		SBIRD	1	FEMUR	0	G	LE	
352	9	3	06		0	0		SYLVILAGUS	21		0	F	LE,RE,SC,CB	
360	9	3	06		0	0		SYLVILAGUS	1	TIBIA	0	E		
373	9	3	06		0	0	PEDESTAL	MELEA	1	TOE	0	G	LE	
377	9	3	07		0	0		LEPUS	2	CALCAN,MT	0	G	LE	
377	9	3	07		0	0		LMAMMAL	4	SF,CANCELLA,AUDITORY,RIB	0	G	CB	cut
377	9	3	07		0	0		MELEA	1	MAND	0	G	LE,CB	
377	9	3	07		0	0		NEOTOMA	3	JAW,INNOM,FEMUR	0	G	LE,CB	
377	9	3	07		0	0		not bone	2	SELENITE,CRYSTAL?	0			
377	9	3	07		0	0		SBIRD	1	SACRALE	0	F	ER,SC	
377	9	3	07		0	0		S/MMAMMAL	11	SF,PLATEY	0	F	LE,ER,SC,CB	
377	9	3	07		0	0		SYLVILAGUS	9	INNOM,JAW,HUM,SKULL	0	F	LE,ER,CB	
377	9	3	07		0	0		THOMOMYS	1	MAND	0	F	LE,ER,SC	
385	9	3	08		0	0		ARTIO	2	RIB,SESS	1	G	LE,CB	
390	9	3	08		0	0		ARTIO	1	ULNA	0	F	SEW,LE,ER,CB	BABY,rodgn
385	9	3	08		0	0		LEPUS	1	SCAP	0	G		
384	9	3	08		0	0		LMAMMAL	1	SF	0	G	LE	artif
385	9	3	08		0	0		LMAMMAL	4	SF,RIB	2	F	LE,ER	INCL. AWL
385	9	3	08		0	0		MUSTELA	0		0			
385	9	3	08		0	0		NEOTOMA	1	MAND	0	F	LE,ER	
385	9	3	08		0	0		not bone	3	ROCK	0			
385	9	3	08		0	0		S/MMAMMAL	21	SF,PLATEY	7	F	SEW,LE,RE,ER,CB	
385	9	3	08		0	0		SYLVILAGUS	10	INNOM,RIB,MAND,SKULL,LB	0	F	LE,CB	
393	9	3	09		0	0		ARTIO	2	SESS,TOOTH	0	F	LE,ER	cut inept
393	9	3	09		0	0		LEPUS	6	TOOTH,RIB,MAND	0			
393	9	3	09		0	0		LMAMMAL	15	SF,CANCELLA	0	P	SEW,LE,RE,ER	
393	9	3	09		0	0		MROD	1	TIBIA	0	E		
393	9	3	09		0	0		NEOTOMA	2	JAW,INNOM	0	G		
393	9	3	09		0	0		SYLVILAGUS	15	TIB,RB,JW,VER,HIP,TOE,TAL	0	F	LE,ER,CB	
398	9	3	10		0	0		DIPO	1	TIBIA	1	G	LE,SC,CB	hscat,rstd
398	9	3	10		0	0		LBIRD	4	TENDONS	0	G	LE	
398	9	3	10		0	0		M/LMAMMAL	3	SF	0	F	LE,ER	
400	9	3	10		0	0		NEOTOMA	4	SCAP,SKULL,VERT	0	E		
398	9	3	10		0	0		not bone	1	ROCK	0			
398	9	3	10		0	0		S/MMAMMAL	11	SF,SK	4	F	LE,ER,CB	
398	9	3	10		0	0		SYLVILAGUS	4	VERT,RIB,MT,SKULL	0	F	LE,CB	
400	9	3	10		0	0		SYLVILAGUS	1	MAND	0	G	LE,SC	gnaw
398	9	3	10		0	0		THOMOMYS	30	MOST	0	G	LE,SC	
376	9	3	4567		0	0		SYLVILAGUS	1	TOE	0	E	LE	
376	9	3	4567		0	0		THOMOMYS	1	JAW	0	G	LE,RE	

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FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
808	10	1	02		0	0		LMAMMAL	6	RIB,SF	0	P	SEW,ER	
808	10	1	02		0	0		S/MMAMMAL	2	SF	0	F	LE	
808	10	1	02		0	0		SYLVILAGUS	1	TIBIA	0	F	SEW,ER	
809	10	1	03		0	0		LMAMMAL	1	SF	0	G	LE	
809	10	1	03		0	0		SYLVILAGUS	4		0	F	LE,ER,CB	
812	10	1	04		0	0		LMAMMAL	2	SF	0	F	SEW,RE,ER	
812	10	1	04		0	0		S/MMAMMAL	2	SF	0	P	SEW,LE,ER	
812	10	1	04		0	0		SYLVILAGUS	1	TOE	0	G	LE	
817	10	1	05		0	0		DIPO	1	FEMUR	0	G		
817	10	1	05		0	0		LMAMMAL	8	RIB,SF,PLATEY	2	F	LE,ER,CB	
817	10	1	05		0	0		MMAMMAL	1	FEMUR?	0	F	LE,ER,CB	BABY
817	10	1	05		0	0		SYLVILAGUS	1	INNOM	0	F	CB	
820	10	1	06		0	0		ARTIO	1	FEMUR	0	P	SEW,LE,ER	
820	10	1	06		0	0		LEPUS	1	HUM	0	G	CB	
820	10	1	06		0	0		M/LMAMMAL	2	SF	0	F	LE,ER,CB	
820	10	1	06		0	0		not bone	1	PINE CONE	0			
820	10	1	06		0	0		S/MMAMMAL	4	SF	0	F	LE,ER,CB	
820	10	1	06		0	0		SYLVILAGUS	3	SCAP,SKULL	0	F	LE,ER,CB	
824	10	2	01		0	0		LMAMMAL	11	SF	0	P	SEW,LE,RE,ER	
824	10	2	01		0	0		MELEA	1	VERT	1	G	LE,CB	
824	10	2	01		0	0		not bone	3	CERAMIC,STONE	0			
824	10	2	01		0	0		S/MMAMMAL	7	SF	0	F	LE,ER,CB	
824	10	2	01		0	0		SYLVILAGUS	7	JAW,SKULL,FEMUR,TIB,VERT	0	F	LE,ER,CB	
828	10	2	02		0	0		ARTIO	3	RIB,CARPAL	0	F	LE,ER,CB	
828	10	2	02		0	0		LYNX	1	RADIUS	0	G	LE	cut
828	10	2	02		0	0		M/LMAMMAL	2	SF	0	F	LE,CB	
828	10	2	02		0	0		not bone	2	ROCK	0			
823	10	2	02		0	0		S/MMAMMAL	2	SF	0	F	LE,ER	
831	10	2	03		0	0		MMAMMAL	8	SF,PLATEY	6	F	SEW,LE,ER	
829	10	2	03		0	0		ODOCOILEUS	1	RADIUS	0	G	ER,CK,CB	
831	10	2	03		0	0		SYLVILAGUS	1	TIBIA	1	G	LE,ER,CB	
837	10	2	04		0	0		ARTIO	2	HUMERUS,VERT	0	G	ER,CB	INCL. BABY
837	10	2	04		0	0		CANID	1	VERT	0	G	LE	
837	10	2	04		0	0		LBIRD	1	OSSITENDON	0	G	LE	
837	10	2	04		0	0		LMAMMAL	10	SF,ULNA,RIB	4		SEW,LE,ER,CB	
837	10	2	04		0	0		SYLVILAGUS	3	TIB,RAD,ULNA	0	E		
837	10	2	04		0	0		THOMOMYS	1	INNOM	0	F	LE,CB	
840	10	2	05		0	0		ARTIO	3	MP,SCAP	0			AWL
840	10	2	05		0	0		LBIRD	1	MPHAL	0	G	LE,CB	
840	10	2	05		0	0		M/LMAMMAL	3	SF	0	F	LE,ER,CB	
840	10	2	05		0	0		MPASSER	2	CMC,HUM	0	G	ER	
840	10	2	05		0	0		NEOTOMA	2	MAND	0	G	ER	
840	10	2	05		0	0		SCRICETID	1	INNOM	0	E		
840	10	2	05		0	0		SYLVILAGUS	1	INNOM	0	F	ER,CB	
840	10	2	05		0	0		THOMOMYS	1	MAND	0	F	LE,ER	
844	10	2	06		0	0		AQUILA?	1	MAND	0			
844	10	2	06		0	0		ARTIO	2	SCAP,VERT	0	F	LE,ER,CB	INCL. BABY
844	10	2	06		0	0		LEPUS	2	HUM,AUDITORY	0	F	LE,ER,CB	
844	10	2	06		0	0		M/LMAMMAL	27	SF,PLATEY	0	F	SEW,LE,RE,ER,CB	AWL
844	10	2	06		0	0		MROD	1	TIBIA	0	F	LE,CB	

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FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
844	10	2	06		0	0		not bone	7	CERAMIC,DAUB,ROCK,MINERAL	0			
844	10	2	06		0	0		SYLVILAGUS	9	JAW,FOOT,LEG	1	G	LE,CB	
844	10	2	06		0	0		THOMOMYS	1	MAND	0	F	ER	
849	10	2	07		0	0		ARTIO	5	SK,SCAP,RIB	0	F	LE,RE,ER,CB	ground
852	10	2	07		0	0		ARTIO	5	CALCAN,RIB,FEMUR	0	F	LE,RE,CB	
852	10	2	07		0	0		LMAMMAL	9	SF,PLATEY	6	F	LE,ER	
852	10	2	07		0	0		MELEA?	1	ULNA	1	G	LE,CB	cut
849	10	2	07		0	0		not bone	1	ROCK	0			
852	10	2	07		0	0		not bone	2	ROCK (DEBITAGE?)	0			
849	10	2	07		0	0		S/MMAMMAL	2	SF	0	F	LE,ER,SC,CB	
852	10	2	07		0	0		SYLVILAGUS	3	FOOT,TIBIA	1	F	LE,CB	
852	10	2	07		0	0		THOMOMYS	1	INNOM	0	F	LE,SC	
855	10	2	08		0	0		ARTIO	2	RIB,TOE	0	F	LE,RE,CB	
855	10	2	08		0	0		LMAMMAL	4	SF,RIB,VERT	0	F	LE,CB	
855	10	2	08		0	0		not bone	2	ROCK	0			
855	10	2	08		0	0		S/MMAMMAL	8	SF	2	F	LE,RE,CB	
855	10	2	08		0	0		SYLVILAGUS	5	HIP,RAD,HUM,MAND	0	F	LE,RE,CB	
858	10	2	09		0	0		ARTIO	2	TIB,HUM	0	F	LE,ER,CB	
858	10	2	09		0	0		LMAMMAL	3	SF	1	F	LE,ER,CB	
858	10	2	09		0	0		not bone	2	ROCK	0			
858	10	2	09		0	0		S/MMAMMAL	4	SF	1	F	LE,CB	
858	10	2	09		0	0		SYLVILAGUS	3	VERT,INNOM	0	P	SEW,LE,RE,ER,CB	
862	10	2	10		0	0		ARTIO	6	RIB,SCAP,TOOTH,PATELLA	0			
862	10	2	10		0	0		CYNOMYS	1	MAX	0	G	LE,CB	
862	10	2	10		0	0		LEPUS	1	CALCAN	0	G	LE	
862	10	2	10		0	0		LMAMMAL	1	SF	0	F	LE	
862	10	2	10		0	0		M	5	SF,PLATEY	0			
862	10	2	10		0	0		not bone	4	ROCK,CHARCOAL	0			
862	10	2	10		0	0		SYLVILAGUS	3	JAW,TIBIA	0	F	LE,ER,CB	
862	10	2	10		0	0		THOMOMYS	1	MAND	0	G	LE	
862	10	2	10		0	0		VLM	1	RIB	0	G	LE,ER	BISON?arti

Gallinas Springs LA1178 faunal rough sort, on all bones from 1987 NFS/CGI mitigation. Rough diagnosis by Jack B. Bertram

FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
403	11	1	03		0	0		SMAMMAL	1	RIB?	0	F	SEW,LE,ER	
408	11	1	06		0	0		UNKNOWN	1	FR	0	P	SEW,LE,RE,ER	
412	11	1	09		0	0		LMAMMAL	1	TOOTH	0	F	ER	
1605	11	2			42	0	PIECE-PLOTTED	ARTIO	3	HUM	0	F	LE,ER	
415	11	2	01		0	0		LMAMMAL	3	SF	0	P	SEW,LE,RE,ER,CB	
420	11	2	03		0	0		LMAMMAL	1	PLATEY	1	F	LE	
423	11	2	04		0	0		ARTIO	1	FEMUR	0	F	LE,ER,CB	
423	11	2	04		0	0		LEPUS	2	ILIUM,MC	1	F	LE,ER	
423	11	2	04		0	0		LMAMMAL	8	FR	4	F	LE,ER,CB	
423	11	2	04		0	0		S/MMAMMAL	3	SF	0	F	ER	
423	11	2	04		0	0		SYLVILAGUS	1	SCAP	0	G	LE,CB	
428	11	2	05		0	0		ARTIO	2	TOOTH,CARPAL	0	G	LE	
428	11	2	05		0	0		LMAMMAL	1	PLATEY	1	F	LE	ground?
428	11	2	05		0	0		M/LMAMMAL	17	SF	0	F	SEW,LE,ER,CB	
428	11	2	05		0	0		SYLVILAGUS	2	FEM,HUM	0	F	SEW,LE,CB	
430	11	2	06		0	0		LMAMMAL	4	SF	0	P	SEW,LE,RE,ER	

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FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
1504	13	0	5&6		0	0		LMAMMAL	10	SF	1	P	LE,ER	

Gallinas Springs LA1178 faunal rough sort, on all bones from 1987 NFS/CGI mitigation. Rough diagnosis by Jack B. Bertram

FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
1514	15	0	04		0	0		LMAMMAL	1	SF	0	F	LE,CB	

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FSNO	TRNCH	UNIT	LEVEL	LEV_MOD	TOP	BOT	CONTEXT	TAXON	NUMB	PARTS	N_BRN	CONDIT	TAPHO	COMMENTS
1535	18	0	05		0	0		ARTIO	1	TOE	1	F	LE,ER	

Appendix H.2

DETAILED FAUNAL ANALYSIS KEY

Self-evident abbreviations are omitted

Sample:	C = check (not in sample; full bag done)
	S = selected item
	D = detailed analysis
Element:	S = skull
	T = tooth
	c = consistent with, comparable
	s = size of
Side:	P = paired
Age-Fusion:	L = large
	M = medium
	S = small
	v = very
	f = fused
	u = unfused
	p = partly fused (fusion states are listed from proximal to distal)
Cook, Burn:	B = burned
	R = roasted
	P = probable
	Y = yes
Gnaw:	D = dog
	H = human
	R = rodent
	[repetition = intensity]
Cut:	B = broken (impact)
	Y = yes (mode uncertain)
	K = knife
	A = ax/maul/chopper

Taphonomy: r = rather
fr = fresh in appearance
le = leached
re = root etched
er = eroded
et = etched
m = moderate
s = severe
v = very
del = delaminating
sew = surface-exposure weathering
misc = variable miscellaneous damage

Numeric Variables: Refit number = count before refitting
Count = count after refitting
Poolset = lumped provenience identifier (see text)

Gallinas Springs LA1178 detailed faunal analysis listing: NFS/CGI mitigation of 1987. Diagnosis listing prepared 1989-90 by J. B. Bertram

Field Spec. #	Pool Set #	Sample	Refit #	Species	Element	Portion	Count	Side	Age-Fusion	Sex	Burn?	Cook?	Gnaw?	Cut?	Artifact	Taphonomy	Comments
9	1	C	0	Antilocapra	phalanx 1	complete	1		L			?				mle	
13	1	C	0	Antilocapra	phalanx 2	complete	2					?					2 feet
13	1	C	0	Lepus	pesphalanx 1	complete	1					Y				mle	pair?
13	1	C	0	Lepus	pesphalanx 1	complete	1									rfr	pair?
9	1	C	0	c Meleagris	ulna	complete	1	R	immat			?				mle	ca 16 weeks
13	1	C	0	Sylvilagus	S mandible	anterior frag	1	L	M							rfr	
9	1	C	0	Sylvilagus	S mandible	anterior half	1	R			R?	Y				mle	
9	1	C	0	c Sylvilagus	S temporal	frag	1	R				P				mle	
13	1	C	0	Sylvilagus	tibia	shaft	1	L				P				rfr	
9	1	C	0	Sylvilagus	vert lumbar	centrum frag	1		f		R	P				mle	
13	1	C	0	artiodactyl	S T incis	complete	1		worn							rfr	old
13	1	C	0	artiodactyl	rib	distal frag	1				?	Y	RR	B		mre	
13	1	C	0	lge mammal	shaft	frag	1				B						
13	1	C	0	lge mammal	shaft	frag	3					?				le	
9	1	C	0	med/lge mammal	shaft	frag	2				R	P		B		mle	
9	1	C	0	sm/med mammal	shaft	frag	1					P				mle	
13	1	C	0	sm/med mammal	shaft	frag	1				R?	P				mle	
61	2	D	0	Antilocapra	phalanx 3	complete	1		L			P				le	
61	2	D	0	Lepus	ulna	proximal half	1	L	vL			?				mle	big!
61	2	D	0	Neotoma	radius	complete	1	L	fu							rfr	
61	2	D	0	Onychomys	Skull	anterior half	1		L			P				mle	
61	2	D	0	c Sylvilagus	S sphenoid	frag	1					P				mer	
61	2	D	0	Sylvilagus	ulna	complete	1	L	f							rfr	
61	2	D	0	artiodactyl	metapodial	distal frag	1		u			Y				ser	lima
61	2	D	0	med/lge mammal	costal?	frag	1				P	Y				ver	
51	3	D	0	Antilocapra	phalanx 2	complete	1		f							rfr	
51	3	D	0	c Antilocapra	scapula	near complete	1	R	infan			Y				le	
36	3	D	0	Antilocapra	sessamoid	complete	2		L			?				mle	
51	3	D	0	Cervus/Bison	rib	frag	3				R	Y				le	better as bison
51	3	D	0	Lepus	S parietal	near complete	1	L			R	Y				mle	
51	3	D	0	Lepus	S premaxilla	near complete	1	R	L		R	Y				mle	
51	3	D	0	Lepus	femur	ball	1	L	f			?					
51	3	D	0	Lepus	femur	distal half	1	L	fL			?					
36	3	D	0	Lepus	femur	proximal frag	1	L	L			?	DH			scat?	
36	3	D	0	Lepus	humerus	distal half	1	R	L							rfr	
51	3	D	0	Lepus	innominate	anterior half	1	R	f		B						
51	3	D	0	Lepus	innominate	ilium frag	1	R			R	P				mle	MNI=2
45	3	D	0	Lepus	innominate	near complete	1	R	senil		?	P				mle	
45	3	D	0	Lepus	metacarpal 3	complete	1	R	f							rfr	
36	3	D	0	Lepus	metatarsal 3	complete	1	R	uL			?				mle	
45	3	D	0	Lepus	rib	proximal frag	1				B						
36	3	D	0	Lepus	rib	shaft frag	1	L			B						
51	3	D	0	Lepus	rib	shaft frag	1	R				P					
45	3	D	0	Lepus	rib 12	complete	1	L	f			P					
45	3	D	0	Lepus	rib 4	shaft	1	R				?				rfr	
36	3	D	0	Lepus	rib 5	proximal half	1	L								rfr	
51	3	D	0	Lepus	scapula	distal half	1	R	immat			P				le	
36	3	D	0	Lepus	tarsal astragal	complete	1	R	L							rfr	
34	3	D	0	Neo. albigula	S mandible	near complete	1	R			R	Y				mle	
45	3	D	0	Neo. r mexicana	S mandible	near complete	1	R				?				mle	
36	3	D	0	Neotoma	S mandible	anterior half	1	L				Y				mle	
36	3	D	0	Neotoma	femur	complete	1	L	fu			P					
51	3	D	2	Neotoma	femur	proximal half	1	R	f		R	Y				mle	51
36	3	D	0	Neotoma	humerus	distal half	1	R	f			P					
36	3	D	0	Neotoma	radius	complete	1	R	fu			?					
51	3	D	0	Neotoma	tibia	distal half	1	R	f							rfr	
51	3	D	0	Odocoil/Antiloc	metatarsal	shaft frag	1	?	L			P		B			better as deer
45	3	D	0	Odocoileus	phalanx 1	complete	1		f		B					mle	
51	3	D	0	c Sialia	carpometacarpus	complete	1	R				?				rfr	Muscicapid
51	3	D	0	Sylvilagus	S frontal	frag	1	L	M		R?	Y					, same
51	3	D	0	Sylvilagus	S mandible	anterior half	1	L	L			?					
45	3	D	0	Sylvilagus	S mandible	anterior half	1	L				Y					MNI=2
45	3	D	0	Sylvilagus	S mandible	proximal half	1	L				?				mle	MNI=2
45	3	D	0	Sylvilagus	S mandible	anterior frag	2	P	f				scat			scat	
51	3	D	0	Sylvilagus	S mandible	anterior frag	1	R	M		R	Y				mle	
36	3	D	0	Sylvilagus	S mandible	anterior half	1	R	f			P				mer	
45	3	D	0	Sylvilagus	S maxilla	frag	1	L	f			Y					
36	3	D	0	Sylvilagus	S maxilla	frag	1	R	L							mle	
51	3	D	0	Sylvilagus	S nasal	near complete	1	L	M		R?	Y					same
45	3	D	0	Sylvilagus	S premaxilla	frag	2	P	f			Y					

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Field Spec. #	Pool Set #	Sample	Refit #	Species	Element	Portion	Count	Side	Age-Fusion	Sex	Burn?	Cook?	Gnaw?	Cut?	Artifact	Taphonomy	Comments
36	3	D	0	Sylvilagus	S temporal	frag	1	R								rfr	
51	3	D	0	Sylvilagus	femur	ball	1	L	f			?					
51	3	D	0	Sylvilagus	femur	distal half	1	L	f							rfr	
45	3	D	0	Sylvilagus	femur	proximal frag	1	L					scat?			scat?	MNI=3
45	3	D	0	Sylvilagus	femur	proximal half	1	L	uu							rfr	MNI=3
45	3	D	0	Sylvilagus	femur	shaft frag	1	L								rfr	MNI=3
36	3	D	0	Sylvilagus	femur	proximal half	1	R	uL		P	Y				mle	
45	3	D	0	Sylvilagus	humerus	distal frag	1	L	f			?					
36	3	D	0	Sylvilagus	humerus	distal half	2	P				?				mle	
45	3	D	0	Sylvilagus	innominate	ilium frag	1	L	f		?	Y	DH?			mle	
51	3	D	0	Sylvilagus	innominate	ischium frag	1	R				?					
36	3	D	0	Sylvilagus	innominate	near complete	1	R			R?	Y				mre	
51	3	D	0	Sylvilagus	innominate	near complete	1	R	f			P				rfr	MNI=2
51	3	D	0	Sylvilagus	metacarpal 2	complete	1	R	f					?			
36	3	D	0	Sylvilagus	metacarpal 2	complete	1	R	f							rfr	
36	3	D	0	Sylvilagus	metatarsal	distal half	1		f		R?	Y				le	
36	3	D	0	Sylvilagus	metatarsal	shaft frag	1									rfr	
45	3	D	0	Sylvilagus	metatarsal 2	complete	1	L	u		?	P				mle	MNI=3
36	3	D	0	Sylvilagus	metatarsal 2	complete	1	L	f							rfr	
51	3	D	0	Sylvilagus	metatarsal 2	complete	1	R	f			P					
36	3	D	0	Sylvilagus	metatarsal 2	complete	1	R	f							rfr	
45	3	D	0	Sylvilagus	metatarsal 2	proximal half	1	R			B	P				mle	MNI=3
36	3	D	0	Sylvilagus	metatarsal 3	complete	1	R	partf							rfr	
45	3	D	0	Sylvilagus	metatarsal 3	complete	1	R	u		?	P				mle	MNI=3
45	3	D	0	Sylvilagus	metatarsal 4	complete	1	L	f		R?	Y					MNI=3
51	3	D	0	Sylvilagus	metatarsal 4	complete	1	L	f			P					
45	3	D	0	Sylvilagus	metatarsal 4	complete	1	R	f			?					MNI=3
36	3	D	0	Sylvilagus	metatarsal 4	complete	1	R	partf							rfr	
51	3	D	0	Sylvilagus	metatarsal 4	complete	1	R	f			P					
51	3	D	0	Sylvilagus	metatarsal 5	complete	1	L	f			P					
45	3	D	0	Sylvilagus	pesphalanx 1	complete	2		f			?				mle	45
36	3	D	0	Sylvilagus	pesphalanx 1	complete	2		f							rfr	
51	3	D	0	Sylvilagus	pesphalanx 1	complete	1		f					?			
45	3	D	0	Sylvilagus	radius	shaft frag	1	?			B						MNI=2/3
36	3	D	0	Sylvilagus	radius	distal half	1	R	f			?				le,er	
45	3	D	0	Sylvilagus	radius	proximal + shaf	1	R	?			?					MNI=2/3
45	3	D	0	Sylvilagus	radius	proximal frag	1	R			B						MNI=2/3
51	3	D	0	Sylvilagus	radius	proximal half	1	R			B						
45	3	D	0	Sylvilagus	radius	shaft	1	R								rfr	MNI=2/3
51	3	D	0	Sylvilagus	rib	frag	2				R?	P				mle	
45	3	D	0	Sylvilagus	rib	shaft frag	1	R									
45	3	D	0	Sylvilagus	rib 6	proximal half	1	R	f								
45	3	D	0	Sylvilagus	rib 7	proximal half	1	L	f								
45	3	D	0	Sylvilagus	rib 9	near complete	1	L									
45	3	D	0	Sylvilagus	scapula	blade frag	1	?				?	?			ver	
51	3	D	0	Sylvilagus	scapula	blade frag	1	L				?				rfr	
45	3	D	0	Sylvilagus	scapula	distal frag	1	L	f			Y				mle	MNI=2
45	3	D	0	Sylvilagus	scapula	distal half	1	L	f							rfr	MNI=2
36	3	D	0	Sylvilagus	scapula	near complete	2	L								mre	
36	3	D	2	Sylvilagus	scapula	distal half	1	R								mre	
45	3	D	0	Sylvilagus	tarsal astragal	complete	1	L	M								
36	3	D	0	Sylvilagus	tarsal astragal	complete	1	L	L							rfr	
51	3	D	0	Sylvilagus	tarsal astragal	complete	3	R	f			?					MNI=3
36	3	D	0	Sylvilagus	tarsal calcaneu	complete	2	L	L			?				mle	
51	3	D	0	Sylvilagus	tarsal calcaneu	complete	1	R	f			?					
45	3	D	0	Sylvilagus	tibia	distal	1	L	f			?					
51	3	D	0	Sylvilagus	tibia	proximal	1	L	f			?				mle	
45	3	D	0	Sylvilagus	tibia	distal	1	R	f		?	Y				mle	
51	3	D	0	Sylvilagus	tibia	distal + shaft	1	R	L		R?	Y					MNI=4
51	3	D	0	Sylvilagus	tibia	distal half	1	R	L			P				mle	
51	3	D	0	Sylvilagus	tibia	distal half	1	R	uL		R?	Y				mle	
51	3	D	0	Sylvilagus	tibia	distal half	1	R	uM		R					le	
51	3	D	0	Sylvilagus	tibia	proximal	1	R	f			?				mle	
45	3	D	2	Sylvilagus	tibia	proximal frag	1	R	f		R	Y				le	
36	3	D	0	Sylvilagus	tibia	proximal half	1	R	uL			Y				mle	
45	3	D	0	Sylvilagus	tibia	shaft frag	1	R								rfr	
36	3	D	0	Sylvilagus	tibia	shaft frag	1	R				?				mle	
51	3	D	0	Sylvilagus	tibia	shaft frag	1	R			R						
36	3	D	2	Sylvilagus	ulna	near complete	1	R	?u.L		R	Y				mle	
45	3	D	0	Sylvilagus	ulna	near complete	1	R	f							rfr	

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Field Spec. #	Pool Set #	Sample	Refit #	Species	Element	Portion	Count	Side	Age-Fusion	Sex	Burn?	Cook?	Gnaw?	Cut?	Artifact	Taphonomy	Comments
36	3	D	0	Sylvilagus	vert lumbar	lateral process	1	R								rfr	
45	3	D	0	Sylvilagus	vert lumbar 6	near complete	1		ff		?	Y				mle	
45	3	D	0	Sylvilagus	vert lumbar 7	near complete	1		ff		?	Y				mle	
36	3	D	0	Thomomys	S mandible	near complete	1	R				?					
51	3	D	0	artiodactyl	S T canine	complete	1	L	L							rfr	best as deer
45	3	D	0	artiodactyl	S petrous	frag	1	?				?				mle	
51	3	D	0	artiodactyl	carpal pisiform	complete	1	R	L							rfr	
51	3	D	0	artiodactyl	phalanx 2	near complete	1		infan			P				le	
45	3	D	0	artiodactyl	rib	distal quarter	1	L				?		K?		mle	
45	3	D	0	artiodactyl	rib	proximal frag	1	R				?		B		mle	
51	3	D	0	artiodactyl	rib	shaft	1	R				Y				mle	
51	3	D	0	artiodactyl	ulna	shaft frag	1	?			B						
45	3	D	0	lge mammal	cancel	frag	5				P	Y		B		er	
51	3	D	0	lge mammal	cancel	frag	2				R	Y				le	
36	3	D	0	lge mammal	innominate?	ischium frag	1				B						
45	3	D	0	lge mammal	rib?	shaft frag	2				B					mle	
45	3	D	0	lge mammal	shaft	frag	1				?	P				mer	
45	3	D	0	lge mammal	shaft	frag	1				B					mle	
36	3	D	0	lge mammal	shaft	frag	3				R?	Y	D?	B?		er	
36	3	D	0	lge mammal	shaft	frag	1							B		rfr	
51	3	D	0	lge mammal	shaft	frag	1				B						
36	3	D	0	lge mammal	vert	centrum frag	1		u			?				rfr	
36	3	D	0	med carnivore	humerus	distal frag	1	R			R	Y				er	
36	3	D	0	med rodent	femur	complete	1	R	uu			P					v. young
36	3	D	0	med rodent	tibia	proximal half	1	L	uS			Y					
51	3	D	0	med sciurid	tibia	distal	1	R	f							rfr	scat?
51	3	D	0	med/lge mammal	shaft	frag	5										
51	3	D	0	med/lge mammal	shaft	frag	12					P					
36	3	D	0	sm/med mammal	Skull	frag	1					?				rfr	
45	3	D	0	sm/med mammal	general	frag	16									variable	
45	3	D	0	sm/med mammal	shaft	frag	3						scat?			scat?	
36	3	D	0	sm/med mammal	shaft	frag	10					?				variable	
45	3	D	0	sm/med mammal	shaft	frag	8					?					
51	3	D	0	sm/med mammal	shaft	frag	8					P					
36	3	D	0	sm/med mammal	shaft	frag	4				B						
72	4	D	0	Cervus	S nasal	posterior	1	R	infan		R?	Y				vle	ca 4 months?
72	4	D	0	Lepus	femur	distal frag	1	L	u?				scat			scat	
72	4	D	0	Lepus	innominate	shaft	1	L			B						
77	4	D	0	Lepus	radius	shaft frag	1	R			B						
77	4	D	0	s Lepus	rib	shaft frag	1					?				rfr	
72	4	D	0	Lepus	rib	shaft frag	1	L					scat?			scat?	
72	4	D	2	Lepus	scapula	blade	1	L	f				scat?			scat?	
77	4	D	0	Lepus	scapula	near complete	1	L	L			?				mre	
72	4	D	0	Lepus	tibia	proximal frag	1	R	f				scat			scat	
77	4	D	0	Odocoileus	femur	distal quarter	1	L	f	F?		Y		B		mle,mer	
77	4	D	0	Odocoileus	metatarsal	proximal frag	1	R	f		R	Y		B		mle,mer	match
77	4	D	0	Odocoileus	tarsal bicuneif	complete	1	R	f		R?	Y				mle	match
77	4	D	0	Odocoileus	tarsal cubonavi	near complete	1	R	f		R?	Y		B		mle	match
72	4	D	2	Sylvilagus	S mandible	anterior half	1	L	f			Y	scat?			scat?	
72	4	D	0	Sylvilagus	femur	distal half	1	L	f				scat?			scat?	
77	4	D	0	Sylvilagus	femur	proximal quarte	1	L	f		R	Y				mle	
72	4	D	0	Sylvilagus	innominate	near complete	1	R	f				scat?			scat?	
72	4	D	0	Sylvilagus	manusphalanx 3	complete	1	?					scat			scat	
72	4	D	0	Sylvilagus	metatarsal 2	proximal frag	1	L					scat			scat	
72	4	D	0	Sylvilagus	metatarsal 3	proximal frag	1	L					scat			scat	
1602	4	D	0	Sylvilagus	metatarsal 3	complete	1	R	uL			P				mle	
72	4	D	0	Sylvilagus	metatarsal 4	proximal frag	1	L					scat			scat	
1602	4	D	0	Sylvilagus	metatarsal 4	complete	1	R	uL			P				mle	
1602	4	D	0	Sylvilagus	metatarsal 5	complete	1	R	uL			P				mle	
72	4	D	3	Sylvilagus	scapula	near complete	1	R	f			?	scat?			scat?	
72	4	D	0	Sylvilagus	tarsal astragal	frag	1	L					scat			scat	
72	4	D	0	Sylvilagus	tarsal calcaneu	frag	1	L					scat			scat	
72	4	D	0	Sylvilagus	tarsal navicula	complete	1	L					scat			scat	
72	4	D	0	Sylvilagus	tibia	proximal frag	1	?					scat			scat	
72	4	D	0	Sylvilagus	tibia	proximal frag	1	L	f				scat?			scat?	
72	4	D	0	Sylvilagus	tibia	distal quarter	1	R	f				scat?			scat?	
72	4	D	2	artiodactyl	Skull	frag	1		imma?			?				mle,mre	
72	4	D	0	artiodactyl	rib	distal + shaft	1	L				Y				mle	
72	4	D	0	artiodactyl	vert cervical	centrum frag	1		u		B					er	
77	4	D	0	lagomorph	ulna	distal half	1	L	f			?				rfr	

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Field Spec. #	Pool Set #	Sample	Refit #	Species	Element	Portion	Count	Side	Age-Fusion	Sex	Burn?	Cook?	Gnaw?	Cut?	Artifact	Taphonomy	Comments
77	4	D	0	lge bird	tibiotarsus	distal half	1		vimm			?				vle	baby turkey?
77	4	D	0	lge bird	tibiotarsus	distal half	1		vimm			?				vle	baby turkey?
77	4	D	0	lge mammal	cancel	frag	3				R?	P		B		mle	
72	4	D	0	med/lge mammal	shaft	frag	1						scat			scat	
77	4	D	0	med/lge mammal	shaft	frag	2				B						
72	4	D	0	sm mammal	miscellaneous	frag	30						scat			scat	
77	4	D	0	sm/med mammal	Skull	frag	3					?					
72	4	D	0	unknown	carpal?	complete	1					?				mle	not recogn

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Field Spec. #	Pool Set #	Sample	Refit #	Species	Element	Portion	Count	Side	Age-Fusion	Sex	Burn?	Cook?	Gnaw?	Cut?	Artifact	Taphonomy	Comments
120	13	D	0	Antilocapra	rib 9	near complete	1	L						K			distal inside
152	13	D	0	Lepus	metatarsal 3	proximal half	1	L			R	P				le	
152	13	D	0	Odocoileus	metacarpal	distal half	1	L	f	F		P		B		mle	
152	13	D	0	Sylvilagus	tibia	distal	1	L	f							rfr	
152	13	D	0	Sylvilagus	tibia	proximal shaftf	1	R	u?			P				le,er	
152	13	D	0	Thomomys	S mandible	complete	1	L	immat							le	
152	13	D	0	c Thomomys	humerus	distal	1	L	f							vfr	instrusive?
152	13	D	0	artiodactyl	S Tooth	frag	1									worn	prob antilo
120	13	D	0	lge bird	femur?	shaft frag	1							Y	AML	mle	
152	13	D	0	lge mammal	Skull?	frag	1		infan			?					very porous
152	13	D	0	lge mammal	shaft	frag	1									le,er	
152	13	D	0	med mammal	rib	shaft	1	R	M?							rfr	fox-sized?
152	13	D	0	med/lge mammal	S petrous	frag	2					?		B		le	
162	14	D	0	Antilocapra	carpal pisiform	complete	1	L				Y				le	
162	14	D	0	c Antilocapra	sessamoid	complete	1					?				mle	
159	14	D	0	c Cyanocitta	ulna	complete	1	L	f							rfr	
165	14	D	0	Lepus	S maxilla	frag	1	R				?	scat?			er	
159	14	D	0	Lepus	metacarpal 5	proximal + shaf	1	L	?			Y				le,del	
162	14	D	0	Meleagris	S mandible	shaft frag	1	L	L			?				mle	
159	14	D	0	Meleagris	S nasal	near complete	1	L								mle	
159	14	D	0	Meleagris	manusphalanx1.3	complete	1	L	L			?				mle	
159	14	D	0	Sylvilagus	S mandible	anterior frag	1	L			R?	Y				le	
162	14	D	0	Sylvilagus	S premaxilla	frag	1	R				P				mle	
159	14	D	0	Sylvilagus	innominate	ischium	1	L	Lu			?				mle	
159	14	D	0	Sylvilagus	radius	complete	1	R	fu				RRR			rfr	
159	14	D	0	Sylvilagus	tarsal astragal	complete	1	L	f							mle	
162	14	D	0	Sylvilagus	ulna	distal frag	1	R	partf			?				mle	
159	14	D	0	artiodactyl	humerus	proximal shaftf	1	?	?		B					le,er	
165	14	D	0	artiodactyl	innominate	pubis frag	1	L	M	M		Y		B		le,er	
159	14	D	0	lge bird	innominate	ilium frag	1	L				?				mle	
159	14	D	0	lge mammal	platey	frag	5					Y				le	
159	14	D	0	lge mammal	rib	frag	1					Y				le	
165	14	D	0	lge mammal	shaft	flake	1				R	P				le,er	sew?
159	14	D	0	lge mammal	shaft	flake	1					P		B		sew	
159	14	D	0	lge mammal	shaft	flake	2					P		B		mle	
162	14	D	0	lge mammal	shaft	frag	1				B					le	
162	14	D	0	lge mammal	shaft	frag	1					?				le,mer	
159	14	D	0	lge mammal	shaft	splinter	8					?				sew	
162	14	D	0	med mammal	shaft	frag	1				R					le,er	
159	14	D	0	sm/med mammal	platey	frag	11					P				variable	
159	14	D	0	sm/med mammal	shaft	frag	4					Y				le,er	

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Field Spec. #	Pool Set #	Sample	Refit #	Species	Element	Portion	Count	Side	Age-Fusion	Sex	Burn?	Cook?	Gnaw?	Cut?	Artifact	Taphonomy	Comments
245	21	S	0	Homo	clavicle	near complete	1	R	L			?		?		mle,mre	shovel? knife?
245	21	S	0	Sylvilagus	scapula	complete	1	R	L							rfr	
204	21	S	2	Zenaida	sternum	near complete	1		L							rfr	SAMP
245	21	S	0	mammal	vert	centrum	1		infan								tiny Artio?
230	22	D	0	c Aphoelocoma	Skull	beak frag	1									le,er	or other jay
230	22	D	0	Aphoelocoma	humerus	complete	1	R	f			?				mle	or other jay
225	22	D	0	c Aphoelocoma	sternum	frag	1									er	or other jay
225	22	D	0	Sylvilagus	S mandible	frag	1	R						B		rfr	
230	22	D	0	Sylvilagus	S parietal	near complete	1	R				?				mle	
219	22	D	0	Sylvilagus	femur	shaft	1	L	uu							rfr	
230	22	D	0	Thomomys	S mandible	near complete	2	R								rfr	MNI=2
230	22	D	0	Thomomys	Skull	anterior half	1		L							rfr	
230	22	D	0	Thomomys	humerus	complete	1	R	Old							scat?	
219	22	D	0	Thomomys	tibia	shaft	1	L	immat				scat?			le,er	
230	22	D	0	c Thomomys	vert lumbar 4	complete	1		ff							rfr	
225	22	D	0	artiodactyl	S sphenoid	frag	1		neona							le	
225	22	D	0	artiodactyl	rib	complete	3		neona							le	
219	22	D	0	artiodactyl	rib	complete	1	L	neona							le	
219	22	D	0	artiodactyl	rib	complete	1	R	neona							le	
225	22	D	0	artiodactyl	vert	centrum	3		neona							le	
225	22	D	0	artiodactyl	vert cervical	half arch	4		neona							le	
230	22	D	0	artiodactyl	vert cervical	near complete	1		neona							le	or stillborn
227	22	D	0	artiodactyl	vert sacral	arch	1	R	fetus			?				mle	
225	22	D	0	artiodactyl	vert thorassic	arch	1		neona							le	
219	22	D	2	artiodactyl	vert thorassic	complete	1		neona							le	
225	22	D	0	cervid	S zygoma	frag	1	L	L			P				mle	deer or elk
219	22	D	0	lge mammal	shaft	flakes	2							B		mle	
225	22	D	0	med passerine	sternum	frag	1									le	
230	22	D	0	med/lge mammal	Skull?	flake	2					?		B		le	
230	22	D	0	med/lge mammal	Skull?	frag	1					?		B		mle	
230	22	D	0	sm/med mammal	S auditory	frag	1									rfr	
219	22	D	0	sm/med mammal	shaft	frag	1					?				le	
219	22	D	0	sm/med mammal	unknown	frag	2					?				le	
225	22	D	0	small form	shaft	frag	1									vfr	
230	22	D	0	unknown	Skull?	frag	1									vle,ver	
225	22	D	0	unknown	cancella	frag	1									vle,ver	
236	23	D	2	c Aphoelocoma	pelvis	near complete	1										or other jay
236	23	D	0	Onychomys	S mandible	near complete	1	L	Old				scat?			rfr	v. worn teeth
256	23	D	0	c Onychomys	innominate	complete	1	R	f		R?	Y				mle	or other cricket
236	23	D	0	Sylvilagus	innominate	near complete	1	R	Old							mle	
236	23	D	0	c Sylvilagus	vert lumbar	lateral process	1									rfr	
236	23	D	0	Thomomys	vert lumbar	complete	3									rfr	
256	23	D	0	artiodactyl	S temporal	complete	1		neona			?				vle	
256	23	D	0	artiodactyl	humerus	complete	1	L	neona			?				vle	
256	23	D	0	artiodactyl	sternum	segment	1		neona			?				vle	
236	23	D	0	artiodactyl	vert	arch frag	1		neona							le	
236	23	D	0	artiodactyl	vert atlas	frag	1		neona							le	
256	23	D	0	artiodactyl	vert thorassic	arch halkf	1		neona			?				vle	
236	23	D	0	artiodactyl	vert thorassic	near complete	1		neona							le	
256	23	D	3	lge mammal	shaft	frag	2					P				le	
256	23	D	0	med rodent	vert cervical	complete	1		fL								Thomo?
236	23	D	0	med/lge mammal	rib?	frag	1					P				le	
236	23	D	0	sm/med mammal	shaft	frag	2				B					le	
236	23	D	0	sm/med mammal	shaft	frag	2					?				le	
256	23	D	0	small mammal	Skull	cranium frag	2									rfr	
236	23	D	0	unknown	cancel	frag	1									ver	from artio neonate?
260	25	D	0	Meleagris	tibiotarsus	complete	1	R	L	M							
259	25	D	0	Sylvilagus	innominate	near complete	1	L								rfr	
259	25	D	0	artiodactyl	scapula	blade frag	1					?				le,er	
259	25	D	0	artiodactyl	sternal	segment	1		Limma			Y	H?			le	
259	25	D	0	artiodactyl	vert thorassic	spinous process	1		Limma			P	?			le	
259	25	D	0	med rodent	vert caudal	complete	1		ff							mle	

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363	31	C	0	c Meleagris	S premaxilla	frag	1									le	
351	31	C	0	Microtus	innominate	complete	1	R	f							rfr	
351	31	C	0	Sylvilagus	S T incisor	frag	1	?				?				er	
351	31	C	0	artiodactyl	S T incisor	near complete	1		Old							mle	worn
351	31	C	0	artiodactyl	S nasal	frag	1	?				Y				mle	
351	31	C	0	lge mammal	shaft	flake	1					P		B		mle	
351	31	C	0	lge mammal	shaft	frag	1					Y				mle,del	
351	31	C	0	med mammal/bird	shaft	frag	2					Y				le,del	
334	32	D	0	Lepus	innominate	anterior half	1	L	f			?				mle	
334	32	D	0	Meleagris	sternum	frag	1		L							le	
334	32	D	0	Neotoma	S mandible	anterior half	1	L	immat							mle	
334	32	D	0	Odocoileus	tarsal maleolus	complete	1	L				Y				le	
366	32	D	0	Sylvilagus	femur	shaft	1	L	udL			?				le	
334	32	D	0	Sylvilagus	tibia	shaft frag	1	L			R?	Y				rfr	
366	32	D	0	Sylvilagus	ulna	proximal half	1	L	uL			?				mle	
366	32	D	0	Sylvilagus	ulna	proximal shaft	1	R	?			?				mle	
334	32	D	0	lge bird	radius	proximal frag	1	R	L			P				mle	
334	32	D	0	lge mammal	cancella	frag	7					Y				mle	vert? skull?
334	32	D	0	lge mammal	platey	frag	1				B						
366	32	D	0	lge mammal	shaft	frag	1					?				le	
334	32	D	0	lge mammal	shaft	frag	3									sew	
334	32	D	0	lge mammal	shaft	frag	1				B					le,er	
334	32	D	2	lge mammal	shaft	frag	1					P				mle	
334	32	D	0	lge mammal	tibia	proximal frag	1					P		B		le	
334	32	D	0	med mammal/bird	rib	frag	2					P				mle	Lepus or bigger
369	33	D	0	Antilocapra	phalanx 2	complete	1		f			?				le,er	
340	33	D	0	Lepus	fibulary	near complete	1	R	f				scat?			rfr	
369	33	D	0	Lepus	radius	proximal half	1	L	f			?				mle	
340	33	D	0	Lepus	rib	shaft	1	?				?				mle	
340	33	D	0	c Odocoileus	phalanx 1	complete	1		u		R?	Y				le	
340	33	D	0	Sylvilagus	S mandible	anterior frag	1	L	L			?				mle	no rights
340	33	D	0	Sylvilagus	S mandible	distal + shaft	3	L	L			?				mle	MNI=4
340	33	D	0	Sylvilagus	S premaxilla	frag	2	P	f			P				mle	
340	33	D	0	Sylvilagus	humerus	proximal epiphy	1	L	u			Y				mle	
342	33	D	0	Sylvilagus	innominate	ischium frag	1	R				?				mle	
340	33	D	0	Sylvilagus	pesphalanx	near complete	1		f				RRR			rfr	
376	33	D	0	Sylvilagus	pesphalanx 1	complete	1		f							rfr	
340	33	D	0	Sylvilagus	tibia	shaft frag	1	R			B						
376	33	D	0	Thomomys	S mandible	anterior half	1	L								mle,er	
371	33	D	0	lge mammal	shaft	flake	1							B		mle	
340	33	D	0	mammal	S petrous	frag	1									er	unIDable
369	33	D	0	med/lge mammal	platey	frag	1					P				le	
340	33	D	0	med/lge mammal	rib	shaft	2					Y				le	
340	33	D	0	med/lge mammal	shaft	frag	2				R	P				mle	imm artio?
340	33	D	0	sm/med mammal	shaft	frag	4					?				mle	
340	33	D	0	sm/med mammal	shaft	frag	1					Y				mle	
340	33	D	0	sm/med mammal	shaft	frag	1				B					le	
340	33	D	0	unidentified	cancel	frag	2					?				er	
340	33	D	0	very lg mammal	shaft	frag	1					P				mle	
360	34	D	0	Antilocapra	S mandible	complete	1	L	f							rfr	4-6 yr old
352	34	D	0	Lepus	S mandible	ramus frag	1	R	L			?				mle	
372	34	D	0	Lepus	metatarsal 2	complete	1	L	f							rfr	
352	34	D	0	Lepus	rib 4	shaft	1	R				P				mle	
352	34	D	0	Lepus	rib 6	shaft	1	L				Y				mle	
352	34	D	0	Lepus	tarsal astragal	complete	1	L	f			?				mle	
372	34	D	0	Lepus	tarsal calcaneu	frag	1	L								mle	
352	34	D	0	Lepus	vert thorassic	near complete	1		ff			?				mle	
352	34	D	0	Microtus	S mandible	anterior half	1	L								mle	longicaudus or montanus
352	34	D	0	Neo. albigula	S mandible	complete	1	L				?					
372	34	D	0	Neo. albigula	S mandible	anterior half	1	R	f								pull for check
372	34	D	0	Neo. albigula	femur	complete	1	R	fu								pull for check
372	34	D	0	Neo. albigula	innominate	near complete	1	R									pull for check
352	34	D	0	Neo. stephensi	S mandible	anterior frag	1	R				?				mle	
352	34	D	0	Neo. stephensi	S mandible	complete	1	R				?					could be micropus
352	34	D	0	Neotoma	femur	proximal half	1	R	f			?				mle	
372	34	D	0	Odocoileus	S auditory	frag	1	R?								er	
352	34	D	0	Odocoileus	phalanx 2	complete	1		f							mle	
354	34	D	0	Odocoileus	phalanx 3	complete	1		L			P				del	
352	34	D	0	Sylvilagus	S premaxilla	near complete	2	P	f							le,er	

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372	34	D	0	Sylvilagus	femur	proximal frag	1	R	?			P	RRR			mle	
352	34	D	0	Sylvilagus	humerus	proximal epiphy	1	L	u			?				mle	
352	34	D	0	Sylvilagus	humerus	distal	2	P	f			?				mle	
352	34	D	0	Sylvilagus	innominate	near complete	1	L	f			Y				mle,er	
352	34	D	2	Sylvilagus	innominate	near complete	1	R	uL			Y				mle,er	
372	34	D	0	Sylvilagus	innominate	near complete	1	R	f			?				mle	
352	34	D	0	Sylvilagus	metatarsal 3	proximal half	1	L								rfr	
352	34	D	0	Sylvilagus	metatarsal 3	complete	1	R	uL		R?	Y				mle	
352	34	D	0	Sylvilagus	pesphalanx 1	complete	1		f		R	P				mle	
352	34	D	0	Sylvilagus	scapula	distal half	1	L	f							rfr	
352	34	D	0	Sylvilagus	scapula	near complete	1	L	f			Y				mle	
352	34	D	0	Sylvilagus	scapula	near complete	1	R	f			?				mle	
352	34	D	0	Sylvilagus	tarsal astragal	complete	1	L	f							rfr	
360	34	D	0	Sylvilagus	tibia	near complete	1	L	f							rfr	
352	34	D	0	Sylvilagus	tibia	distal	1	R	f			Y				mle	
352	34	D	0	Sylvilagus	ulna	complete	1	L	f			P				mle	
352	34	D	0	Sylvilagus	ulna	shaft	1	L	L			?				mle	
372	34	D	0	Thomomys	S mandible	anterior frag	1	L								rfr	
352	34	D	0	artiodactyl	radius	shaft frag	1	?						B		mle,er	
352	34	D	0	artiodactyl	rib 10	proximal shaft	1	L	L			P				mle	
373	34	D	0	lge bird	phalanx	complete	1		M/L							le	turkey?
372	34	D	0	lge mammal	cancel	frag	3									le,er	
352	34	D	0	lge mammal	cancella	frag	5					P				mle	
352	34	D	0	lge mammal	rib	shaft frag	1				R?	Y	RR			le,er	
372	34	D	0	lge mammal	rib	shaft frag	1					P	R			mle	
352	34	D	0	lge mammal	shaft	frag	3							B		mle	
352	34	D	0	lge mammal	shaft	frag	3					Y				le,er,	sew?
352	34	D	0	lge mammal	shaft	frag	2				B					mle	
372	34	D	0	med passerine	sacrale	frag	1		f							le	so Robin
352	34	D	0	sm passerine	femur	proximal half	1	L	f							rfr	
352	34	D	0	sm/med mammal	miscellaneous	frag	1				B					le	
352	34	D	0	sm/med mammal	miscellaneous	frag	41					P				variable	
323	35	D	0	Antilocapra	sessamoid	complete	1		L			?				mle	
377	35	D	0	Meleagris	S mandible	ramus frag	1	L	L			Y				le	
377	35	D	0	Sylvilagus	S mandible	distal frag	2	P				?				mle	MNI=1?
377	35	D	0	Sylvilagus	S mandible	anterior half	1	R								rfr	
377	35	D	0	Sylvilagus	S parietal	near complete	1	R				?				mle	
323	35	D	0	Sylvilagus	femur	distal epiphysi	1	L	uL		R?	Y				mle	
377	35	D	0	Sylvilagus	humerus	distal half	1	L				Y				mle	
377	35	D	0	Sylvilagus	humerus	proximal half	1	L	u			P				mle	
323	35	D	0	Sylvilagus	humerus	distal half	1	R	f			?				rfr	
377	35	D	0	Sylvilagus	humerus	proximal frag	1	R	partf				?			er	MNI=2
323	35	D	0	Sylvilagus	innominate	shaft	1	R	f			?	?			mle	
323	35	D	0	Sylvilagus	pesphalanx 1	complete	1		f.		B					mle	
323	35	D	0	Sylvilagus	sternal	segment	1		u			Y				mle	
323	35	D	0	Sylvilagus	tarsal calcaneu	complete	1	L	f			?				vle,ver	
323	35	D	0	Sylvilagus	tibia	shaft frag	1	R								rfr	
379	35	D	0	lge mammal	platey	frag	1		vimm		R?	Y				le	porous
323	35	D	0	lge mammal	shaft	flake	1					Y				mle,re	
323	35	D	0	lge mammal	shaft	frag	1					?				le,er	
323	35	D	0	lge mammal	shaft	frag	2				B						
323	35	D	0	sm mammal	S turbinal	frag	1					?				er	
377	35	D	0	sm/med mammal	platey	frag	9					P				variable	
323	35	D	0	sm/med mammal	shaft	frag	4				R?	Y				mle	
377	35	D	0	sm/med mammal	shaft	frag	1				B					le	
377	35	D	0	unidentified	unknown	frag	3									le,er	
385	36	D	0	Antilocapra	sessamoid 2	complete	1		f							le	
390	36	D	0	Antilocapra	ulna	shaft	1	L	immat			P	RRR			le,er	misID in field
338	36	D	0	Cynomys	S mandible	complete	1	L				?				mle	big Pdog
385	36	D	0	Lepus	S temporal	near complete	1	R	M			?				mle	
338	36	D	0	Lepus	innominate	ilium	1	R	L					Y	SCRA		tool
385	36	D	2	Lepus	scapula	near complete	1	L	L							mle	
385	36	D	0	Mustela frenata	S maxilla	complete	1	R	juven			?				le	longtail weasel
385	36	D	0	Neotoma	S mandible	near complete	1	R	L							le	
338	36	D	0	Odocoileus	carpal scaphoid	complete	1	L	L		R?	Y				mle	
385	36	D	0	Sylvilagus	S mandible	near complete	1	R	L			P				mle	
385	36	D	0	Sylvilagus	S mandible	proximal frag	2	R	f			P				mle	MNI=2
385	36	D	0	Sylvilagus	femur	distal	1	L	u			Y				le	
338	36	D	0	Sylvilagus	femur	proximal half	1	R	u			?				mle	
385	36	D	0	Sylvilagus	innominate	near complete	1	L	f			?				mle	

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Field Spec. #	Pool Set #	Sample	Refit #.	Species	Element	Portion	Count	Side	Age-Fusion	Sex	Burn?	Cook?	Gnaw?	Cut?	Artifact	Taphonomy	Comments
385	36	D	0	Sylvilagus	innominate	anterior half	1	R	f			Y	DH?			mle,er	
385	36	D	0	Sylvilagus	rib 13	complete	1	R	f			P				mle	
385	36	D	0	Sylvilagus	tibia	distal	1	L	f			?	scat?			er	
385	36	D	0	Sylvilagus	tibia	shaft frag	1	L	?							rfr	
385	36	D	0	artiodactyl	costal	frag	1					?				le,er	
385	36	D	0	artiodactyl	rib	head frag	1		f			?				mle	
338	36	D	0	artiodactyl	vert cervical	arch frag	3					Y		B		le	smashed, grease
385	36	D	0	lge mammal	shaft	flake	1							B		mle	
385	36	D	0	lge mammal	shaft	frag	1				R?	Y				er	
338	36	D	2	lge mammal	shaft	frag	1							B		mer	
385	36	D	0	lge mammal	shaft	frag	1							Y	AWL?	rfr	
384	36	D	0	lge mammal	shaft	frag	1							Y	ART	mle	die blank
385	36	D	0	lge mammal	shaft	frag	2									sew	
385	36	D	0	med/lge mammal	platey	frag	2				R?	P				mle	
385	36	D	0	med/lge mammal	platey	frag	1				B					le	
385	36	D	0	sm/med mammal	miscellaneous	frag	8					?				variable	
385	36	D	0	sm/med mammal	shaft	frag	1					?				mle	
338	36	D	0	unknown	platey	frag	2					P				mle	
393	37	D	0	Lepus	S T premolar3Lw	complete	1	L								mle	
344	37	D	0	Lepus	metatarsal 5	proximal half	1	L			R	Y				rfr	
393	37	D	0	s Lepus	rib	shaft frag	1									rfr	
344	37	D	0	Lepus	tarsal navicula	complete	1	L	f			?				mle	
344	37	D	0	Meleagris	tibiotarsus	distal shaft	1	L				?		K		rfr	
393	37	D	0	Neo. albigula	S mandible	complete	1	R	f							rfr	Pull check
393	37	D	0	Neo. albigula	innominate	near complete	1	R	f							rfr	pull check
393	37	D	0	Odocoileus	S T molar1Up	complete	1	R	Old			P				er	wornout
393	37	D	0	Odocoileus	sessamoid	complete	1					?		KK		le	first upper outer
344	37	D	0	Sylvilagus	S mandible	anterior half	1	L				Y				le	
393	37	D	0	Sylvilagus	S mandible	complete	1	L				?				mle	
393	37	D	0	Sylvilagus	S nasal	near complete	1	L				P				mle	
393	37	D	0	Sylvilagus	humerus	proximal epiphy	1	L				?				mle	
344	37	D	0	Sylvilagus	innominate	near complete	1	L	f			?				mle	
393	37	D	0	Sylvilagus	innominate	shaft	1	L	f			Y				mle	
344	37	D	0	Sylvilagus	manusphalanx 1	complete	2		f			?				mle	
393	37	D	0	Sylvilagus	manusphalanx 1	complete	1		u			?				mle	MNI=3
344	37	D	2	Sylvilagus	radius	complete	1	R	u			?				mle	
393	37	D	0	Sylvilagus	rib 11	shaft	1	L				?				mle	
393	37	D	0	Sylvilagus	rib 3	proximal frag	1	R				Y				mle	
393	37	D	0	Sylvilagus	rib 5	proximal	1	R	f			Y				mle	
344	37	D	0	Sylvilagus	scapula	blade	1	R				?				mle	
393	37	D	3	Sylvilagus	tibia	complete	2	L	f								1 big, 1 little
344	37	D	0	Sylvilagus	ulna	near complete	1	R	u			?				mle	
393	37	D	0	Sylvilagus	vert caudal 5	complete	1		ff			?				mle	
393	37	D	0	Sylvilagus	vert lumbar	centrum frag	1		f?			?				mle	
393	37	D	0	c Thomomys?	tibia	proximal half	1	R	partf							rfr	pull check
344	37	D	2	artiodactyl	ulna	distal shaft fr	1					?				le	
344	37	D	0	artiodactyl	vert caudal	complete	1		f							mle	
344	37	D	0	artiodactyl	vert thorassic	apophysis	1		u			P				mle	
393	37	D	0	lge mammal	cancella	frag	12					?				ver,vle	saw?
393	37	D	0	lge mammal	shaft	flake	1							B		mle	
344	37	D	0	lge mammal	shaft	frag	1				B					mle	
344	37	D	0	lge mammal	shaft	frag	4					P				le,er	
344	37	D	0	lge mammal	shaft	frag	1									mle	
344	37	D	0	sm/med mammal	shaft	frag	4					P				mle	
344	37	D	0	sm/med mammal	shaft	frag	2									mle	
393	37	D	0	sm/med mammal	shaft	frag	2					?				mle	
393	37	D	0	sm/med mammal	unknown	frag	1					Y				le	
355	38	D	0	Antilocapra	innominate	near complete	1	L	f			?	R			mle	battered,older
400	38	D	0	Sylvilagus	S mandible	dentary frag	1	L								mer	
398	38	D	0	Sylvilagus	S parietal	frag	1	L	?			P				mle	
356	38	D	0	Sylvilagus	femur	proximal half	1	R	u			?				mle	
398	38	D	0	Sylvilagus	metatarsal 5	complete	1	R	f			?				mle	
398	38	D	0	Sylvilagus	rib 6	complete	1	R	f			?				mle	
356	38	D	0	Sylvilagus	vert lumbar	lateral process	1									rfr	
398	38	D	0	Sylvilagus	vert lumbar 5	near complete	1		fu			?				le,er	
356	38	D	0	Thomomys	S mandible	anterior frag	2	R									MNI=2
400	38	D	0	Thomomys	S zygoma	frag	1	L								er	
398	38	D	37	Thomomys	Skeletons	partial	3									intrusi?	1 old, 1 med, 1 baby
400	38	D	0	Thomomys	scapula	distal half	1	L					scat?			rfr	
356	38	D	0	artiodactyl	costal	frag	1					?				le,er	

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398	38	D	0	lge bird	tarsal	splint frag	4									le	
356	38	D	0	lge mammal	platey	frag	1				B					le	
356	38	D	0	lge mammal	shaft	frag	1									sew	
398	38	D	0	lge mammal	shaft	frag	3					?		B		le	
398	38	D	0	med rodent	tibia	proximal half	1	R	u							rfr	Neo/Dipo
400	38	D	0	med rodent	vert cervical	complete	1									rfr	
356	38	D	0	med/lge mammal	S nasal	frag	2					?				mle	
398	38	D	0	sm/med mammal	platey	frag	1				B					le	
398	38	D	0	sm/med mammal	platey	frag	3				R?	Y				le	
398	38	D	0	sm/med mammal	shaft	frag	5					?				mle	
398	38	D	0	sm/med mammal	shaft	frag	2				B					le	

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Field Spec. #	Pool Set #	Sample	Refit #	Species	Element	Portion	Count	Side	Age-Fusion	Sex	Burn?	Cook?	Gnaw?	Cut?	Artifact	Taphonomy	Comments
521	53	D	0	Meleagris	femur	distal	1	L	M			?		Y	ART	mle	bead scrap
525	53	D	0	Sylvilagus	S premaxilla	near complete	1	P	S		?	P				rfr	
525	53	D	0	Sylvilagus	radius	near complete	1	L	f		?	Y				rfr	
525	53	D	0	Sylvilagus	ulna	near complete	1	L	f		?	Y				rfr	
525	53	D	0	lge mammal	rib	shaft frag	12				?	?				0er,sew	splinters
521	53	D	3	lge mammal	rib	shaft frag	1					?				mle	
521	53	D	0	lge mammal	unknown	frag	4				R					le	
525	53	D	0	sm cricetid	femur	near complete	1	L	fu			P				mle	immature
543	54	D	0	Ovis canadensis	radius	distal half	1	L	ff	M?		Y		B		mle,mre	
543	54	D	0	Sylvilagus	innominate	ilium	1	L			B						
548	54	D	0	Sylvilagus	metacarpal 3	complete	1	R	f							rfr	
543	54	D	0	Sylvilagus	tarsal calcaneu	anterior half	1	L			R					le,er	shovel cut
531	54	D	0	Sylvilagus	tibia	shaft	1	L				P	RRRR	?	?		mice
548	54	D	0	Thomomys	S mandible	complete	1	L	S			?				le,er	
531	54	D	0	lge mammal	Skull	frag	1									mle	
548	54	D	0	lge mammal	platey	frag	2				R?	Y				le	
548	54	D	0	lge mammal	shaft	frag	1				?	P		B		mle	
545	55	D	0	c Antilocapra	femur	distal shaft fr	1	R				?		B			spiral
534	55	D	0	c Dipodomys sm	phalanx 3	complete	1				B						
534	55	D	0	c Dipodomys sm	tarsal astragal	complete	1	R			B						
545	55	D	0	Lepus	femur	distal half	1	R	f				RRR			mle	mice
529	55	D	0	Lepus	humerus	half shaft	1	L				Y				le	
534	55	D	2	c Meleagris	S quadrate	near complete	1	L			B						
534	55	D	0	c Meleagris	articular	frag	1	L			B						
545	55	D	0	c Odocoileus	S petrous	frag	1	R				?					
534	55	D	0	Sylvilagus	S T molar	frag	1				B						
545	55	D	0	Sylvilagus	metatarsal 3	complete	1	R	f			Y				mle	
533	55	D	0	Sylvilagus	metatarsal 5	proximal half	1	R								mer	
545	55	D	0	Sylvilagus	ulna	proximal half	1	L	f							mle	
534	55	D	0	Thomomys	S T molar	frag	1				B						
533	55	D	0	artiodactyl	manubrium	complete	1					P				mle	
534	55	D	0	jay?	manusphalanxD2	near complete	1	R			?					fresh?	
534	55	D	3	lge bird	S jugal?	frag	1				B						
541	55	D	0	lge mammal	shaft	frag	1							B		rfr	flake
545	55	D	2	lge mammal	shaft	frag	1							B		rfr	flake
545	55	D	0	lge mammal	shaft	frag	1				B			B			spiral
545	55	D	0	lge mammal	unknown	frag	1				R	P					phalanx?
545	55	D	0	sm/med mammal	platey	frag	1				R					mle	
534	55	D	0	sm/med mammal	shaft	frag	69				B						Sylv and smaller
545	55	D	0	sm/med mammal	shaft	frag	3				B						
534	55	D	2	unknown	unknown	frag	1				B						seashell?
566	56	D	0	Lepus	S mandible	near completa	1	L	L			Y	RRR				mice, big hare
550	56	D	0	Lepus	tibia	distal half	1	L	f		R?	Y				rfr	
558	56	D	0	Neo. albigula	S maxilla	dentary	1	L	M			?				mle	
550	56	D	0	Sylvilagus	humerus	proximal half	1	R	f							rfr	
558	56	D	0	Sylvilagus	tarsal calcaneu	complete	1	L	f		B						
558	56	D	0	c Sylvilagus	tib?	shaft frag	1									mle	
566	56	D	0	lge mammal	S mandible	shaft frag	1	?				Y				mle	
558	56	D	0	lge mammal	shaft	frag	1									le	
550	56	D	0	med/lge mammal	rib	shaft frag	1				B						

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607	61	C	6	Homo	S T molar	near complete	1				?					er	
617	61	C	0	Lepus	S mandible	anterior half	1	R	L		R						
614	61	C	0	c Odocoileus	scapula	blade frag	1	R				P				le,del	
614	61	C	2	artiodactyl	rib	distal frag	1					Y				le,er	
617	61	C	0	artiodactyl	vert	centrum frag	1		uu			Y	?			le,er	
617	61	C	0	lge mammal	cancella	frag	1				R					mle	
617	61	C	0	lge mammal	platey	frag	4				R					le,er	
614	61	C	0	lge mammal	shaft	frag	1				R			?	?		polish
614	61	C	0	med/lge mammal	platey	frag	4				R					le	
614	61	C	2	med/lge mammal	shaft	frag	1								ART		polish, traverse cuts
617	61	C	0	not bone	charcoal	frag	1										
614	61	C	0	not bone	groundstone	frag	1				B						
614	61	C	0	very lg mammal	shaft	frag	1				?	?		AK	?	er	pubis? HACKS
625	62	D	0	Lepus	rib	proximal frag	1				B						piece-plot
639	63	D	0	Lepus	tibia	shaft frag	1	R			R						polish?
636	63	D	6	Odocoileus	tibia	proximal half	1	L	f	F?	R					ser	piece-plot
639	63	D	0	Sylvilagus	metatarsal 2	complete	1	R	f		R					mre	
632	63	D	0	Sylvilagus	vert lumbar 6	near complete	1		fu		R					mle	
632	63	D	0	lge mammal	S Tooth	frag	1				R					le,er	
667	63	D	0	lge mammal	cancella	frag	3				B						
667	63	D	0	lge mammal	platey	frag	6				R					le	
636	63	D	2	lge mammal	rib	shaft frag	1				R					ser	piece-plot
667	63	D	0	lge mammal	shaft	frag	2				R					le	
632	63	D	0	lge mammal	shaft	frag	4				B					le,er	
632	63	D	3	lge mammal	shaft	frag	1				R			Y	AWL?		awl shaft?
636	63	D	0	lge mammal	shaft	frag	1				R					ser	piece-plot
639	63	D	0	lge mammal	shaft	frag	4				R					vle,ver	
639	63	D	0	lge mammal	shaft	frag	1				R					mle	
639	63	D	0	med/lge mammal	shaft	frag	2				R					mle	
644	63	D	0	not bone	charcoal	frag	1										2 species
667	63	D	0	unknown	cancella	frag	18				R					ver	smashed
660	64	D	0	Antilocapra	S horn	core frag	1			M	R					vle	
672	64	D	0	Cervus	rib 5	head frag	1	R	f		R					le	not good as Bison
660	64	D	0	Lepus	metacarpal 2	complete	1	L	f								
660	64	D	2	c Meleagris	rib	proximal half	1	R	M		R					le	
657	64	D	2	c Odocoileus	vert lumbar 6	near complete	1		f	M	R			?		mle	Piece Plot 2
656	64	D	6	Ovis canadensis	metatarsal	distal half	1	R	partf					MB		le,er	sm yearl? marrow cracked
660	64	D	2	Sylvilagus	S frontal	near complete	1	L	M		R					le	
672	64	D	0	Sylvilagus	radius	complete	1	R	f		R						
655	64	D	0	Sylvilagus	radius	proximal	1	R			R					mle	
672	64	D	0	Sylvilagus	vert lumbar	lateral frag	1		uu		R						
660	64	D	0	lagomorph/bird	shaft	frag	2				R						
655	64	D	0	lge mammal	cancella	frag	2				B						
660	64	D	0	lge mammal	scapula	blade frag	1				R					le	
662	64	D	0	lge mammal	scapula	blade frag	1				R	Y				le,er	
660	64	D	0	lge mammal	shaft	frag	2				?	?				vle,er	
663	64	D	0	lge mammal	shaft	frag	2				B					le	
660	64	D	3	lge mammal	shaft	frag	2				B					le	
655	64	D	0	lge mammal	shaft	frag	1				R					er	
649	64	D	0	med/lge mammal	cancella	frag	1				B						
663	64	D	0	med/lge mammal	shaft	frag	2				R					le	
649	64	D	0	med/lge mammal	shaft	frag	5				R					le,er	
649	64	D	0	med/lge mammal	shaft	frag	2				B						
672	64	D	0	med/lge mammal	shaft	frag	6				R					vle,er	
660	64	D	0	med/lge mammal	shaft	frag	1				R					le	
649	64	D	0	not bone	charcoal		1										
647	64	D	0	sm/med mammal	shaft	frag	7				B						
647	64	D	0	unknown	bone?	frag	16				R						

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707	71	S	0	Antilocapra	S premaxilla	near complete	1	R	immat		R?	Y	RRR			mer	approx. 7 month PA
707	71	S	0	Antilocapra	humerus	distal	1	L	f		R?	Y					Part Anal
724	71	S	0	Antilocapra	metatarsal	distal half	1	R	L	M		P				mle	pathol-medl toe short PA
707	71	S	0	Antilocapra	ulna	proximal half	1	L	f			Y	D?	ART	ART	del	Part Anal
712	71	S	0	Lynx rufus	vert lumbar	near complete	1		ff			Y				mle	PA
707	71	S	0	c Meleagris	pesphalanx	distal half	1				R?	P	scat			scat	Part Anal
707	71	S	0	Meleagris	rib	proximal frag	1				R?	Y					Part Anal
707	71	S	0	Ovis r canadens	S premaxilla	complete	1	R	L		R?	Y				mle	adult PA
707	71	S	0	Ovis r canadens	xiphosteum	near complete	1				R?	Y				mle	bighorn? PA
760	71	C	0	artiodactyl	S mandible	ramus frag	1	R	L			Y		B		mle,mre	
724	71	S	0	colubrid	vert	complete	1					?				mle	PA
717	71	S	0	lge bird	rib	shaft	1				R	P				mle	PA
723	71	C	0	lge mammal	platey	frag	1					?				mle	
716	71	C	0	lge mammal	rib	frag	1				B						
705	71	C	0	lge mammal	shaft	frag	1					Y				mle	
727	71	C	0	lge mammal	shaft	frag	3				R	P				mle	
712	71	S	0	med bird	innominate	acetabulum	1										PA
717	71	C	0	med bird	sacrale	near complete	1				R?	?				mle	
717	71	C	0	med/lge bird	coracoid	complete	1	R	vimm								chick
724	71	S	0	med/lge bird	innominate	acetabulum frag	1	L	f			?				le	raptor?
724	71	S	2	med/lge bird	sacrale	near complete	1	L	f			?				le	same raptor?
712	71	S	0	med/lge mammal	shaft	frag	1							ART	ART	ver	Needle PA
724	71	S	2	sm passerine	sternum	frag	1					P				le,er	Grosbeck?
727	71	C	2	sm/med mammal	shaft	frag	1					?				mle	
769	73	D	2	Antilocapra	S T molar 3 Up	complete	1	R								mle	
769	73	D	0	Antilocapra	phalanx 1	complete	1					?	RRR			le	
734	73	D	0	Antilocapra	tarsal astragal	complete	1	R	f			?					
769	73	D	0	Buteo	carpometacarpus	proximal	1	L	M					Y	ART	rfr	bead scrap
765	73	D	0	Corvus corax	humerus	proximal half	1	R	L			?				mle	
765	73	D	0	c Corvus corax	rib sternal	complete	1		L			?				mle	
765	73	D	0	Corvus corax	tibiotarsus	proximal half	1	R	L			?				mle	
765	73	D	0	Corvus corax	vert cervical	complete	3		L			?				mle	
769	73	D	0	Lepus	metacarpal 3	complete	1	L	f		R?	Y				mle	
769	73	D	0	Meleagris	scapula	distal half	1	L	L		R?	Y				le,del	
734	73	D	0	Neotoma	S mandible	frag	1	L				?				rfr	c. albigula
769	73	D	0	Odocoileus	vert cervical 6	arch	1		L	M	R	Y	D?			le	
734	73	D	0	c Ovis	ulna	proximal epiphy	1	L	partL			Y					ID very shakey
734	73	D	0	Sylvilagus	S temporal	frag	1	L			R	P				mle	
734	73	D	0	Sylvilagus	S temporal	frag	1	R			B					mle	MNI=1
769	73	D	0	Sylvilagus	metatarsal 2	complete	1	L	f							rfr	
769	73	D	0	Thomomys	S mandible	anterior frag	1	R				?				mle	
765	73	D	0	Thomomys	tibia	shaft	1	L	immat							rfr	
734	73	D	0	artiodactyl	S Tooth	frag	1				B					mle	
769	73	D	0	artiodactyl	femur?	shaft frag	2	?			R	P				mle	
734	73	D	0	artiodactyl	metapodial	flake	2					?	scat?	KB		rounded	
734	73	D	0	artiodactyl	metapodial	flake	1					P					
765	73	D	0	artiodactyl	metapodial	shaft frag	2					?		B		mle	flaked
734	73	D	0	artiodactyl	rib	distal half	1	R			R?	P					
769	73	D	0	artiodactyl	rib 9	shaft	1	R				Y	RR			mle	
769	73	D	0	lge bird	femur	proximal frag	1	?	f		R	Y	scat?			ver,le	not turkey. Hawk?
769	73	D	0	lge bird	pesphalanx	complete	1		partf		R	P					turkey?
769	73	D	0	lge bird	pesphalanx	proximal frag	1				R	P	scat?			er	turkey?
734	73	D	0	lge bird	shaft	frag	2					?	scat?			mle	
769	73	D	0	lge bird	shaft	frag	1					?				rfr	
769	73	D	0	lge bird	shaft	frag	1				R?	P				mle	
765	73	D	0	lge bird?	innominate?	frag	1				R?	Y				le,er	
734	73	D	0	lge mammal	Skull	frag	1					Y				ver	
769	73	D	0	lge mammal	rib	shaft frag	1	?			R?	Y					
734	73	D	0	lge mammal	rib?	shaft frag	1									rfr	
769	73	D	0	lge mammal	shaft	flake	1					P		B		mle	
734	73	D	0	lge mammal	shaft	flake	1									rfr	
734	73	D	0	lge mammal	unknown	epiphysis frag?	1		u?			Y	RRR			er	
769	73	D	0	lge mammal	vert	centrum frag	1		f			?				mle	
769	73	D	0	med bird	ulna	shaft	1	L								rfr	so Quail
769	73	D	0	med mammal	rib?	shaft frag	1					Y				mle	
769	73	D	0	med/lge mammal	Skull	frag	6				R?	Y	D			er,le	
734	73	D	0	med/lge mammal	platey	frag	4					P				er	
769	73	D	0	med/lge mammal	platey	frag	3				R	P				ver,le	
734	73	D	0	sm/med mammal	shaft	frag	1		imma?				RRR			er	porous
734	73	D	0	sm/med mammal	shaft	frag	1					P				mle	

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Field Spec. #	Pool Set #	Sample	Refit #	Species	Element	Portion	Count	Side	Age-Fusion	Sex	Burn?	Cook?	Gnaw?	Cut?	Artifact	Taphonomy	Comments
734	73	D	0	sm/med mammal	shaft	frag	1							K	ART	rfr	bead scrap
765	73	D	0	unknown	cancel	frag	1					P				le	
765	73	D	0	unknown small	platey	frag	2									rfr	
737	74	D	0	Antilocapra	humerus	proximal epiphy	1	L	uL			Y	?			mle	
1603	74	D	0	Antilocapra	humerus	proximal half	1	L	Old	F		Y	DDD			mle	dog toy
737	74	D	0	Antilocapra	phalanx 3	complete	1					P	RR			mer	
774	74	D	0	Antilocapra	tibia	distal frag	1	L	f			P	?	KKK	BLANK		Awl blank
774	74	D	0	Lepus	Skull	cranium	1	R	L		?	Y				mle	
737	74	D	0	Lepus	tarsal calcaneu	complete	1	R	fL			Y				mre	
737	74	D	0	Meleagris	tibiotarsus	shaft	1	R	M/L	F		Y	D			mle	
774	74	D	0	Neo. r albigula	S mandible	frag	1	L				P					
774	74	D	2	Sylvilagus	femur	distal half	1	L	f		R?	Y				mle	
774	74	D	0	Sylvilagus	humerus	distal frag	1	R				?				mle	
737	74	D	0	Sylvilagus	humerus	proximal half	1	R	partf			Y				mle	
774	74	D	0	Sylvilagus	metatarsal 3	complete	1	R	f			?					
737	74	D	0	Sylvilagus	pesphalanx 1	complete	1									rfr	
737	74	D	0	Sylvilagus	vert lumbar 3	near complete	1		fu			Y				mle	
745	74	D	0	artiodactyl	S T canine	complete	1	R								rfr	
737	74	D	0	lge mammal	cancel	frag	3					P	DD			er, le	
774	74	D	0	lge mammal	platey	frag	2									ver	
737	74	D	0	lge mammal	rib	shaft frag	1					Y		Y		mle	diag - Homo?
737	74	D	0	lge mammal	rib	shaft frag	1					Y				mle	
737	74	D	0	lge mammal	rib	shaft frag	1	R				P					
737	74	D	0	lge mammal	shaft	flake	1							B		rfr	
737	74	D	4	lge mammal	shaft	flake	3					P		B		mer	
774	74	D	0	lge mammal	shaft	frag	1				B					mle	
737	74	D	0	lge mammal	shaft	frag	1				B						
774	74	D	0	lge mammal	shaft	frag	1					Y		B		del	
745	74	D	0	lge mammal	sternal	segment frag	1		u		R?	Y				er	
737	74	D	0	sm/med mammal	platey	frag	10					Y				mle, mer	
774	74	D	0	sm/med mammal	platey	frag	5					P				mle	
774	74	D	0	sm/med mammal	shaft	frag	6					P				mle	
737	74	D	0	sm/med mammal	shaft	frag	1						scat?		ART?	rounded	work?
737	74	D	0	sm/med mammal	shaft	frag	4					P				mle	
745	74	D	0	unknown	cancel	frag	2					P				er	
741	75	D	7	Antilocapra	S frontal	complete	1	L	immat		R	Y				mle	suits #748
741	75	D	0	Antilocapra	phalanx 1	complete	1		f							rfr	
741	75	D	0	Homo	rib 8	shaft	1	L	M/L		R?	P		KK			scraped, cut?
741	75	D	5	Lepus	S cranium	quarter	1	R			R	P					
741	75	D	2	Lepus	S mandible	less ramus	1	R				?				mle	
741	75	D	0	Lepus	innominate	complete	1	L			R	P				mre	
741	75	D	0	Lepus	metatarsal 2	complete	1	R	f		R	P					
741	75	D	0	Lepus	metatarsal 4	proximal half	1	R								rfr	
741	75	D	2	Lepus	rib	shaft frag	1				R	P					
741	75	D	0	Lepus	tarsal calcaneu	complete	1	R	f		R	P					
741	75	D	0	Meleagris	carpal scapholu	complete	1	R			R?	Y					
741	75	D	0	c Meleagris	pesphalanx	complete	1		M		R	P	RR				
784	75	D	0	Meleagris	tarsometatarsus	distal frag	1	R	Limma		R	Y				mle	ca 16 wks
741	75	D	0	Odocoileus	metatarsal	shaft flake	1	?				?		B			
741	75	D	0	Sylvilagus	S mandible	anterior frag	1	L								ver	MNI=2
741	75	D	0	Sylvilagus	S mandible	less ramus	2	P	f		R	Y					
784	75	D	0	Sylvilagus	S parietal	near complete	1	R	S		?	Y				mle	
784	75	D	0	Sylvilagus	S temporal	near complete	1	L	S		?	Y				mle	
741	75	D	0	Sylvilagus	S zygoma	near complete	1	L			R	Y					
741	75	D	0	Sylvilagus	fibulary	shaft	1	?				P					
741	75	D	0	Sylvilagus	humerus	distal half	1	L	f		R	Y					
741	75	D	0	Sylvilagus	innominate	near complete	1	L	f		R	Y					
741	75	D	0	Sylvilagus	metacarpal 2	complete	1	L	f		?	P					
741	75	D	0	Sylvilagus	metacarpal 3	complete	1	L	f		?	P					
741	75	D	0	Sylvilagus	rib 3	near complete	1	R	f		R	Y					
741	75	D	0	Sylvilagus	rib 5	shaft	1	L	L		R	Y					
741	75	D	0	Sylvilagus	scapula	blade	1	R	immat		R?	Y					ca 5 weeks
781	75	D	0	Sylvilagus	scapula	distal	1	R			B						
741	75	D	0	Sylvilagus	tibia	proximal halfsh	1	R	u?		R	Y					
741	75	D	0	Sylvilagus	vert lumbar 3	near complete	1		uu		R	P					
741	75	D	0	Sylvilagus	vert lumbar 4	near complete	1		fu		R	Y					
784	75	D	0	artiodactyl	rib	shaft frag	1	?				Y		KB		mle	
741	75	D	0	artiodactyl	rib 8	shaft	1	L				P				mle	
741	75	D	0	lagomorph	phalanx 1	complete	1		f		R	P					
741	75	D	0	lge mammal	cancella	frag	3				R	P					

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741	75	D	0	lge mammal	shaft	flake	3					P		B			
784	75	D	0	lge mammal	shaft	frag	5					Y				mle	
784	75	D	0	lge mammal	shaft	frag	3				B					mle	
784	75	D	0	med/lge mammal	platey	frag	1				R					le	
741	75	D	0	med/lge mammal	platey	frag	6				R	P					
784	75	D	0	sm/med mammal	platey	frag	6					Y				le	
741	75	D	0	sm/med mammal	shaft	frag	5				R	P					
784	75	D	0	sm/med mammal	shaft	frag	8					Y				mle	
741	75	D	0	sm/med mammal	shaft	frag	2									rfr	
781	75	D	0	sm/med mammal	shaft	frag	5				B						
741	75	D	0	sm/med mammal	unknown	frag	15										variable
786	75	D	0	unknown	platey	frag	1						?				v small
784	75	D	0	vulpid	metacarpal 5	complete	1	L	f			P				mle	mature
784	75	D	2	vulpid	vert thorassic	complete	1		f		P	Y				mle	mature
784	75	D	0	vulpid	vert thorassic2	near complete	1		f			Y				mle	mature
784	75	D	0	vulpid	vert thorassic3	complete	1		f			Y				mle	mature
748	76	D	2	Antilocapra	S frontal	near complete	1	R			R	Y				le	y. male or mat. female
792	76	D	0	Antilocapra	S nasal	shaft frag	1	L	Limma		R	Y				mle	
748	76	D	0	Antilocapra	carpal unciform	complete	1	L				P					
748	76	D	0	c Colaptes aura	sternum	frag	1		L		P	?	?			le,er	
751	76	D	0	Lepus	S temporal	frag	1	R			B						
792	76	D	0	Lepus	humerus	proximal shaft	1	L			R	Y				le,er	MNI=2
792	76	D	0	Lepus	humerus	proximal shaft	1	L			R	Y				mle	MNI=2
792	76	D	0	Lepus	humerus	distal quarter	1	R	f			?				vle,er	
792	76	D	0	Lepus	metatarsal 2	complete	1	R	f			P				mle	
792	76	D	0	Lepus	metatarsal 4	complete	1	R	f			P				mle	
792	76	D	0	Lepus	metatarsal 5	complete	1	R	f			P				mle	
792	76	D	0	Lepus	tarsal astragal	complete	1	R	f			P				mle	
792	76	D	0	Lepus	tarsal calcaneu	complete	1	R	f			P				mle	
792	76	D	0	Lepus	tarsal navicula	complete	1	R	f			P				mle	
792	76	D	0	Lepus	tibia	shaft frag	1	?			R?	Y				mle	
788	76	D	0	Lepus	tibia	distal	1	L	f			P				mle	
792	76	D	0	Lepus	tibia	distal half	1	L			R?	Y				mle	
792	76	D	0	Lepus	ulna	proximal frag	1	L			R?	Y				mle	
751	76	D	0	Lepus	vert lumbar	centrum frag	1		uu			Y				le,er	
788	76	D	0	Neotoma	innominate	acetabulum	1	R								le	
788	76	D	0	Neotoma	scapula	blade frag	1	R								le	
788	76	D	0	Odocoileus	phalanx 3	complete	1		L							le,er	
792	76	D	0	c Odocoileus	sessamoid	complete	1		fS			?				mle	
788	76	D	0	Peromyscus	S mandible	near complete	1	L				?					
792	76	D	0	Sylvilagus	femur	distal frag	1	L	f		R	Y				mle	
748	76	D	0	Sylvilagus	phalanx 1	complete	1		partf			?					
788	76	D	0	Sylvilagus	rib 11	proximal frag	1	R	?			P				mle	
792	76	D	0	Sylvilagus	scapula	distal half	1	L	fu		?	?				mle	
792	76	D	0	Sylvilagus	scapula	distal frag	1	R	S			Y				ver,le	MNI=2
792	76	D	0	Sylvilagus	scapula	distal half	2	R	fu		R?	Y				mle	MNI=2
792	76	D	0	Sylvilagus	scapula	distal half	1	R	M			P					MNI=2
788	76	D	0	Sylvilagus	tibia	distal	1	L	f							le,er	
792	76	D	0	Sylvilagus	tibia	shaft	1	L				P					MNI=2
792	76	D	0	Sylvilagus	tibia	shaft frag	1	L				Y					MNI=2
748	76	D	0	Sylvilagus	tibia	proximal half	1	R			R?	Y					
792	76	D	0	Sylvilagus	ulna	proximal half	1	R	f			P					
792	76	D	0	Sylvilagus	vert lumbar 5	near complete	1		ff		R?	Y				mle	
792	76	D	0	Sylvilagus	vert lumbar 6	near complete	1		fu		R?	Y				mle	
792	76	D	0	Sylvilagus	vert sacral 1	near complete	1		fu		R	Y				mle	
754	76	D	0	Thomomys	S mandible	complete	2	P								mle	intrusive?
754	76	D	3	Thomomys	Skull	anterior half	1									mle	intrusive?
754	76	D	0	Thomomys	femur	near complete	1	R	uu							mle	instrusive?
754	76	D	0	Thomomys	humerus	complete	1	L	uf							mle	intrusive?
748	76	D	0	Thomomys	tibia	complete	1	L	uu							rfr	
754	76	D	0	Thomomys	vert	frag	1									mle	intrusive? 3 segments
792	76	D	0	artiodactyl	S T incis	complete	1	?	worn								
748	76	D	0	artiodactyl	humerus	distal shaft fr	1	R			?	P		B		mre	
792	76	D	2	artiodactyl	metacarpal	distal	1	?	uL			?				vle	imm
792	76	D	0	artiodactyl	metapodial	distal frag	1	?	uL			Y	D?			scat	
754	76	D	0	artiodactyl	metatarsal	proximal frag	1	?				P				mle	
788	76	D	2	artiodactyl	rib 1	shaft	1	L	M							le,er	
792	76	D	0	artiodactyl	rib 10	shaft frag	1	R	L			Y		B		mle	rib plate
792	76	D	0	artiodactyl	rib 12	shaft frag	1	L	L			Y		B		mle	rib plate
792	76	D	0	artiodactyl	rib 5	shaft frag	1	R	L			Y		B		mle	rib plate

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792	76	D	0	artiodactyl	rib 6	shaft frag	1	L	L			Y		KB		mle	rib plate
792	76	D	0	artiodactyl	rib 7	shaft frag	1	L	L			Y		B		mle	rib plate
792	76	D	0	artiodactyl	rib 8	shaft frag	1	L	L			Y		B		mle	rib plate
792	76	D	0	artiodactyl	rib 8	shaft frag	1	R	L			Y		B		mle	rib plate
792	76	D	0	artiodactyl	rib 9	shaft frag	1	R	L			Y		B		mle	rib plate
792	76	D	0	artiodactyl	rib a	proximal frag	1	?	L			Y		B		mle	rib plate
792	76	D	0	artiodactyl	rib a	shaft frag	1	?	L			Y		B		mle	rib plate
751	76	D	0	artiodactyl	vert cervical	articulator fra	1				R?	Y				mle	
792	76	D	0	artiodactyl	vert cervical 6	lateral frag	1	R	f		R	P		B		mle	
748	76	D	0	lge mammal	costal	frag	1					?				mle	
748	76	D	0	lge mammal	rib	head frag	1		u			P				ver	
748	76	D	0	lge mammal	shaft	flake	1							B		rfr	
792	76	D	0	lge mammal	shaft	flake	1				P	Y		B		mle	
751	76	D	0	lge mammal	shaft	flakes	2									rfr	
788	76	D	0	lge mammal	shaft	flakes	3					?		B		le	
751	76	D	0	lge mammal	shaft	frag	1									rfr	
748	76	D	2	lge mammal	shaft	frag	1					?				le,er	
788	76	D	0	lge mammal	shaft	frag	2					?				mle	
788	76	D	0	lge mammal	shaft	frag	1				R?	P				vle,ver	delam
788	76	D	0	lge mammal	shaft	frag	2				B					mle	
792	76	D	0	lge mammal	shaft	frag	5				?	P				mle	
748	76	D	0	lge mammal	shaft	frag	2				B						
788	76	D	0	med bird	shaft	frag	1					?				mle	no ID
748	76	D	0	med carnivore?	vert caudal	near complete	1		uu			P				mle	
751	76	D	2	med/lge mammal	platey	frag	1					?				mle	
792	76	D	0	med/lge mammal	shaft	frag	3					?				misc	
788	76	D	0	sm mammal	platey	frag	1									vle	
792	76	D	0	sm rodent	tibia	proximal half	1	L	u							rfr	
748	76	D	0	sm/med mammal	platey	frag	3					P				le,er	
788	76	D	0	sm/med mammal	platey	frag	3					P				le	
788	76	D	0	sm/med mammal	platey	frag	4				B					mle	
793	76	D	0	sm/med mammal	platey	frag	1				B						
792	76	D	0	sm/med mammal	shaft	frag	10					?				misc	
748	76	D	0	sm/med mammal	shaft	frag	5					P				le,er	
788	76	D	0	sm/med mammal	shaft	frag	1					?				mle	
788	76	D	0	sm/med mammal	shaft	frag	1						scat?			scat?	
751	76	D	0	unknown	cancel	frag	2									er	
792	76	D	0	unknown mammal	metacarpal?	proximal half?	1		f?			?				mle	not recogn.
795	77	D	0	Sylvilagus	S temporal	frag	1	R	S			P				mle	
795	77	D	0	Sylvilagus	vert lumbar 5	near complete	1		ff			?					
795	77	D	0	artiodactyl	rib	shaft frag	1	?				Y	DD			mle	
795	77	D	0	lagomorph	scapula	near complete	1	L	infan							sle	maybe 4 wks
795	77	D	0	lge bird	vert cervical	frag	1					P				mle	could be turkey?
795	77	D	0	lge mammal	platey	frag	1									rfr	
795	77	D	0	lge mammal	rib	shaft frag	3				R	Y				le	
795	77	D	0	lge mammal	shaft	frag	2				B					mle	
797	77	D	0	lge mammal	shaft	frag	1				B			B			
798	78	D	0	Antiloc/Ovis	metacarpal	distal frag	1	?	u			P				mle	better prng than sheep
2701	78	D	0	Antilocapra	ulna	shaft frag	1	L				P				mle	
2701	78	D	0	Sylv. auduboni	S mandible	anterior half	1	R				P				mle	
2701	78	D	0	lge bird	shaft	frag	1									rfr	
2701	78	D	0	lge mammal	Skull	frag	1				R					mle	
2701	78	D	0	lge mammal	platey	frag	1				B						
798	78	D	0	lge mammal	rib	frag	1				B					mle	
798	78	D	0	sm/med mammal	shaft	frag	1				R					le	
798	78	D	0	sm/med mammal	shaft	frag	1				B					mle	
798	78	D	0	sm/med mammal	shaft	frag	1									ver	
798	78	D	0	very lg mammal?	rib?	shaft frag	1				R?	Y			ART?	le	edged

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Field Spec. #	Pool Set #	Sample	Refit #	Species	Element	Portion	Count	Side	Age-Fusion	Sex	Burn?	Cook?	Gnaw?	Cut?	Artifact	Taphonomy	Comments
840	81	C	0	Callipepla	humerus	distal	1	L				?				mle	
844	81	C	0	Coccothraustes	S mandible	anterior frag	1	L				?				mle	eastern race
828	81	C	0	Lynx rufus	radius	complete	1	L	fu			P	RRR	K		mle	ca. 8 month
837	81	C	0	Lynx rufus	vert cervical 6	complete	1		ff			?				mle	seems older than last
840	81	C	0	Neo. albigula	S mandible	frag	1	R	senil			?				le	senile
840	81	C	0	c Xanthocephalus	carpometacarpus	complete	1	R				P				le	or equal size
823	81	C	0	lge mammal	platey	frag	1				B						
849	81	C	0	lge mammal	rib	distal frag	1					?			GRND	mle	
845	81	C	0	lge mammal	shaft	flake	1							B		rfr	
837	81	C	0	lge mammal	shaft	frag	1							ART	ART	mle	frag
844	81	C	0	lge mammal	shaft	frag	1					?		ART	AWL	le,er	
836	81	C	0	med/lge mammal	platey	flake	1				B			B			
852	82	D	2	Antilocapra	S premaxilla	anterior half	1	L	M	F?		Y				mle	
858	82	D	0	Antilocapra	humerus	distal half	1	R	f			?		B		mle	
855	82	D	0	Antilocapra	phalanx 1	complete	1		f			P				mle	
852	82	D	0	Antilocapra	tarsal calcaneu	complete	1	L	ff	F?	R?	Y				mle	
858	82	D	0	c Antilocapra	tibia	shaft frag	1	L	M/L			?				mle	
862	82	D	0	Cervus	S antler	shaft frag	1							Y	ART	le,er	
862	82	D	0	Cynomys	S mandible	frag	1	L	Older			?				mle	
817	82	D	0	Dipodomys c ord	femur	proximal frag	1	R	f			?				mle	
820	82	D	0	Lepus	humerus	distal half	1	L				Y				mle	
852	82	D	0	Lepus	innominate	ilium frag	1	L			B					le,er	
862	82	D	0	Lepus	tarsal calcaneu	complete	1	L	f							mle	
858	82	D	0	c Lepus	vert lumbar	apophysis	1		u			?				mle	
852	82	D	0	Meleagris	ulna	complete	1	L	M	F		Y				mle	
862	82	D	4	Odocoileus	scapula	distal half	1	L	L							le,re	
862	82	D	0	Ovis canadensis	S T premolar 2U	complete	1	R	5-6yr			?				le,er	
820	82	D	0	Sylvilagus	S frontal	frag	1	L	S			Y				le,er	
862	82	D	0	Sylvilagus	S mandible	dentary frag	1					Y				mle	
855	82	D	0	Sylvilagus	S mandible	near complete	1	R				Y				mle,mer	
820	82	D	0	Sylvilagus	S temporal	frag	1	R				P				le,er	
855	82	D	0	Sylvilagus	femur	proximal half	1	L	uu		R?	Y				mle	
855	82	D	0	Sylvilagus	humerus	shaft	1	R				?				mle	
858	82	D	0	Sylvilagus	innominate	acetabulum frag	1	R	partf		R?	Y				le,er	
855	82	D	0	Sylvilagus	innominate	near complete	1	R			R?	Y				le,re	
817	82	D	0	Sylvilagus	innominate	near complete	1	R	f		R?	Y				mle	
852	82	D	0	Sylvilagus	metatarsal 5	complete	1	R	f							rfr	
855	82	D	0	Sylvilagus	radius	distal half	1	R	partf			P				mle	
820	82	D	0	Sylvilagus	scapula	distal half	1	L	f			Y				mle	
852	82	D	0	Sylvilagus	tarsal calcaneu	complete	1	R	f		B					er	
862	82	D	0	Sylvilagus	tibia	distal	1	L	f			P				mle	
852	82	D	0	Sylvilagus	tibia	shaft frag	1	L				Y				mle	
862	82	D	0	Thomomys	S mandible	complete	1	L	L							mle	
852	82	D	0	Thomomys	innominate	distal half	1	R	f							rfr	
855	82	D	0	artiodactyl	costal	frag	1					?				le	
852	82	D	0	artiodactyl	femur	shaft frag	1					?				mle	
820	82	D	0	artiodactyl	femur	distal frag	1	?	u			P				ver	
862	82	D	0	artiodactyl	patella	near complete	1	R	L			Y		?		le,er	
816	82	D	0	artiodactyl	radius	shaft frag	1					P		B		mle,mre	
817	82	D	3	artiodactyl	rib	distal frag	1										
852	82	D	0	artiodactyl	rib	shaft frag	2					?				mle	
855	82	D	0	artiodactyl	rib	shaft	1	L	L			?	?			mle	
852	82	D	0	artiodactyl	ulna	distal shaft fr	1	?	L			P				mle	deer?
855	82	D	0	artiodactyl	vert cervical	articulator fra	1					Y		B		mle	
852	82	D	0	lge bird	sternal	frag	1					?				mle	
820	82	D	0	lge bird?	shaft	frag	1		Limma			P				ver	
817	82	D	0	lge mammal	platey	frag	2										
819	82	D	0	lge mammal	rib	neck frag	1				B					er	
862	82	D	2	lge mammal	rib	shaft	1	L				Y				mle	
855	82	D	0	lge mammal	shaft	frag	1					Y		B		mle	
862	82	D	0	lge mammal	shaft	frag	1									mle	
858	82	D	0	lge mammal	shaft	frag	1				R	P				le	
858	82	D	0	lge mammal	shaft	frag	1					Y				mle	
855	82	D	0	lge mammal	shaft	frag	1							B		mle	
817	82	D	0	lge mammal	shaft	frag	1									ver,sew?	
852	82	D	0	lge mammal	shaft	frag	3				B					er	
858	82	D	0	lge mammal	shaft	frag	1				B					le	
817	82	D	0	med mammal	femur	shaft	1		neona							vle,ver	Lepus or larger
820	82	D	0	med/lge mammal	Skull?	frag	1					P				mle	

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Field Spec. #	Pool Set #	Sample	Refit #	Species	Element	Portion	Count	Side	Age-Fusion	Sex	Burn?	Cook?	Gnaw?	Cut?	Artifact	Taphonomy	Comments
820	82	D	0	med/lge mammal	shaft	frag	1					Y				le,del	
855	82	D	0	sm/med mammal	platey	frag	3				R	?				le	
855	82	D	0	sm/med mammal	platey	frag	5					P				le	
862	82	D	0	sm/med mammal	shaft	frag	1									mle	
858	82	D	0	sm/med mammal	shaft	frag	3				R?	Y				le	
862	82	D	0	sm/med mammal	shaft	frag	1									rfr	
820	82	D	0	sm/med mammal	shaft	frag	1					?					
858	82	D	2	sm/med mammal	shaft	frag	1									rfr	
816	82	D	0	very lg mammal	shaft	frag	1				B						bison/elk

Field Spec. #	Pool Set #	Sample	Refit #	Species	Element	Portion	Count	Side	Age-Fusion	Sex	Burn?	Cook?	Gnaw?	Cut?	Artifact	Taphonomy	Comments
937	92	D	0	artiodactyl	S Tooth	frag	1				B					le	
927	92	D	2	lge mammal	platey	frag	1					?				le	
937	92	D	0	lge mammal	platey	frag	1				R	P				le	
927	92	D	2	lge mammal	shaft	frag	1					P				le,er	
907	92	D	0	lge mammal	shaft	frag	1				B					le	
907	92	D	0	med/lge mammal	shaft	frag	1				R	Y				le	
937	92	D	0	med/lge mammal	shaft	frag	2					Y				le	
941	93	D	0	Antilocapra	femur	distal	1	R	?			P				ver,sew?	
910	93	D	0	Antilocapra	metatarsal	shaft frag	1	?				?		B		mle	flaked
913	93	D	4	c Antilocapra?	phalanx 3	near complete	1									sew,ser	
914	93	D	2	s Cervus	radius	shaft frag	1							B		vle	
913	93	D	0	Lepus	femur	distal half	1	R	partf							mle	
913	93	D	0	Sylvilagus	S mandible	dentary frag	1	R	M							mle	
910	93	D	2	Sylvilagus	S maxilla	frag	1	L									
913	93	D	0	Sylvilagus	metatarsal 4	complete	1	L	u			?				le	
913	93	D	2	Thomomys	femur	complete	1	R	fpf				scat?			scat?	
941	93	D	0	artiodactyl	metatarsal	shaft frag	1								ART AWL	mle	deer? AWL
941	93	D	0	artiodactyl	rib 1	shaft frag	1	R				?				er,le	
941	93	D	2	lge mammal	rib	shaft frag	1					?				er,le	
913	93	D	0	lge mammal	rib?	shaft frag	1									le	
941	93	D	0	lge mammal	shaft	frag	1					Y		B		le,er,	del

Field Spec. #	Pool Set #	Sample	Refit #	Species	Element	Portion	Count	Side	Age-Fusion	Sex	Burn?	Cook?	Gnaw?	Cut?	Artifact	Taphonomy	Comments
1035	101	C	0	Chordeiles	manusphalanx 1	complete	1					?				mle	recheck
1015	101	C	0	Meleagris	vert cervical 5	near complete	1		L	M?				B		mle	Tom?
1035	101	C	0	Sylvilagus	innominate	near complete	1	R	f							mle	
1015	101	C	0	Sylvilagus	tibia	proximal frag	1	L	f			P				mle	
1035	101	C	0	lge mammal	rib	shaft frag	1					Y				sew,del	
1035	101	C	0	lge mammal	shaft	flake	1				R?	P				er	
1015	101	C	0	lge mammal	shaft	frag	1				B					er,le	
1042	102	D	0	Lepus	humerus	distal	1	L	f							rfr	
1042	102	D	0	Lepus	humerus	shaft	1	R								rfr	
1042	102	D	0	Lepus	vert lumbar	lateral process	1					Y				rfr	
1039	102	D	0	Odocoileus	carpal magnotra	complete	1	L	L	F?		?				mle	
1039	102	D	0	Odocoileus	carpal uniform	complete	1	L	L	F?		?				mle	
1042	102	D	0	Odocoileus	tarsal calcaneu	complete	1	R	L	M?		?				mle	
1042	102	D	0	Sylvilagus	S frontal	near complete	1	L				Y				mle	
1042	102	D	0	Sylvilagus	S nasal	near complete	1	R								rfr	
1042	102	D	0	Sylvilagus	femur	proximal shaft	1	L	?			?				mle	
1039	102	D	0	artiodactyl	femur	shaft	1	L	neona			?				vle	
1039	102	D	0	artiodactyl	rib 6	shaft	1	L								mle	
1042	102	D	0	lge mammal	cancella	frag	1				R?	P				le,er	
1039	102	D	0	lge mammal	rib?	shaft frag	2				B					le	
1039	102	D	0	unknown	sessamoid	complete	1					?				mle	
1039	102	D	0	unknown	sessamoid	complete	1									rfr	
1046	103	D	0	Lepus	rib 5	proximal half	1	L	f			?				mle	
1049	103	D	0	lge mammal	shaft	frag	1							B		sew,del	
1046	103	D	0	sm/med mammal	platey	frag	1					P				mle	
1046	103	D	0	sm/med mammal	shaft	frag	2				B					le,er	

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Field Spec. #	Pool Set #	Sample	Refit #	Species	Element	Portion	Count	Side	Age-Fusion	Sex	Burn?	Cook?	Gnaw?	Cut?	Artifact	Taphonomy	Comments
1112	112	D	0	Lepus	S mandible	dentary frag	1	R								rfr	
1112	112	D	0	Lepus	rib	shaft frag	2					Y				mle	
1112	112	D	0	Lepus	rib	proximal frag	1	L				Y				mle	
1177	112	D	2	Lepus	tibia	proximal half	1	L	f		R	P				le	MNI=1?
1177	112	D	0	Lepus	tibia	shaft frag	1	L								rfr	
1109	112	D	0	Sylvilagus	S mandible	anterior frag	1	L				P				mle	
1126	112	D	0	Sylvilagus	radius	proximal frag	1	L				?				le,er	
1112	112	D	0	artiodactyl	S Tooth	frag	1									le	
1112	112	D	0	lge mammal	rib	shaft frag	1					P				mle	
1177	112	D	2	lge mammal	shaft	frag	1				B					mle	
1177	112	D	0	med rodent	innominate	ilium	1	L	?		R?	Y				le	
1177	112	D	0	sm/med mammal	shaft	frag	1									rfr	
1177	112	D	0	sm/med mammal	shaft	frag	2				R	P				le	
1137	113	D	2	Antilocapra	S mandible	near complete	1	R	6yr	F						mle	older adult
1130	113	D	0	Antilocapra	metatarsal	proximal	1	L	L			P		B		mle	
1130	113	D	0	Antilocapra	phalanx 1	complete	1		f							mle	
1130	113	D	0	Antilocapra	phalanx 2	complete	1		f							mle	
1130	113	D	0	Antilocapra	sessamoid	complete	1		f							mle	
1130	113	D	2	Antilocapra	vert cervical 3	near complete	1		fu	M?		P		B		mle	DESCRIBE
1137	113	D	0	Callipepla	coracoid	complete	1	L	f			?				rfr	
1137	113	D	0	c Callipepla	sacrale	complete	1		f			?				mle	
1137	113	D	0	Lepus	S frontal	complete	1	L				P				mle	
1130	113	D	0	Lepus	S frontal	frag	1	L				P				mle	
1137	113	D	0	Lepus	S mandible	proximal frag	1	L								mle	
1130	113	D	0	Lepus	innominate	acetabulum frag	1	L	f			?				rfr	
1130	113	D	0	Lepus	metatarsal 2	complete	1	L	u			?				mle	
1130	113	D	3	Lepus	rib	frag	2					?				mle	
1137	113	D	0	c Lepus	rib	shaft frag	2					?				mle	
1137	113	D	0	Lepus	rib 3	proximal frag	1	R	f			?				mle	
1130	113	D	0	Lepus	tibia	complete	1	L	ff			?				mle	
1137	113	D	0	Lepus	tibia	distal half	1	L	f			?				mle	big
1117	113	D	0	Lepus	tibia	shaft frag	1	R				?				mle	
1130	113	D	0	Lepus	vert lumbar	lateral process	1					?				mle	
1137	113	D	0	Lepus	vert lumbar 5	near complete	1		ff			?				mle	big
1137	113	D	0	Lepus	vert lumbar 6	near complete	1		ff			?				mle	big
1137	113	D	0	Odocoileus?	radius	distal epiphysi	1	L	uL		B					le,er	ID uncertain
1117	113	D	0	Sylvilagus	S mandible	anterior frag	2	L	f							rfr	
1117	113	D	0	Sylvilagus	S mandible	anterior frag	1	L	f			P				mle	
1120	113	D	0	Sylvilagus	S mandible	ramus frag	1	L				?				mle	
1117	113	D	0	Sylvilagus	S mandible	anterior frag	2	P	f							rfr	joined
1130	113	D	0	Sylvilagus	S mandible	less ramus	2	P	f							mle	
1137	113	D	0	Sylvilagus	S mandible	anterior half	2	R				P				mle	
1137	113	D	0	Sylvilagus	S mandible	shaft frag	1	R				P				mle	MNI=3
1117	113	D	0	Sylvilagus	S premaxilla	anterior	2	P	f			?				mle	
1137	113	D	0	Sylvilagus	femur	distal	1	L	f			?				mle	
1137	113	D	0	Sylvilagus	femur	proximal shaftf	1	L									~~MNI=2~~
1130	113	D	0	Sylvilagus	femur	shaft	1	L								mle	
1137	113	D	0	Sylvilagus	humerus	distal	1	L	f							rfr	
1117	113	D	0	Sylvilagus	humerus	shaft	1	L				?				mle	
1117	113	D	0	Sylvilagus	humerus	distal	1	R	f							rfr	
1137	113	D	0	Sylvilagus	humerus	proximal halfsh	1	R			R?	Y				mle	
1130	113	D	0	Sylvilagus	humerus	shaft	1	R				P				mle	
1117	113	D	0	Sylvilagus	innominate	centrum frag	1	L				?				mle	
1137	113	D	0	Sylvilagus	innominate	near complete	2	L	f							rfr	
1130	113	D	0	Sylvilagus	innominate	distal + shaft	1	R	f			?				mle	
1120	113	D	0	Sylvilagus	innominate	ilium frag	1	R	?			?				mle	
1137	113	D	0	Sylvilagus	innominate	near complete	1	R	f							rfr	
1137	113	D	0	Sylvilagus	innominate	near complete	1	R	f			Y				mle	
1130	113	D	0	Sylvilagus	innominate	near complete	1	R	f			?				mle	
1130	113	D	0	Sylvilagus	metatarsal 2	near complete	1	R	f							rfr	
1137	113	D	0	Sylvilagus	metatarsal 4	complete	1	L								rfr	
1117	113	D	0	Sylvilagus	metatarsal 4	complete	1	R	f			?				mle	
1130	113	D	2	Sylvilagus	radius	complete	1	L	uL			Y				le	
1130	113	D	0	Sylvilagus	radius	proximal quarte	1	L								mle	
1130	113	D	0	Sylvilagus	radius	distal half	1	R	f			P				mle	
1130	113	D	0	Sylvilagus	rib 2	complete	1	L	f			Y				mle	
1137	113	D	0	Sylvilagus	scapula	distal half	1	L	f			?					
1130	113	D	0	Sylvilagus	scapula	distal half	1	L	f			P				mle	
1120	113	D	0	Sylvilagus	scapula	distal half	1	L	f			P				mle	

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Field Spec. #	Pool Set #	Sample	Refit #	Species	Element	Portion	Count	Side	Age-Fusion	Sex	Burn?	Cook?	Gnaw?	Cut?	Artifact	Taphonomy	Comments
1137	113	D	0	Sylvilagus	scapula	distal blade	1	R				?					
1120	113	D	0	Sylvilagus	scapula	distal half	1	R	f			Y				mle	
1130	113	D	0	Sylvilagus	tarsal calcaneu	complete	2	L	f							mle	
1137	113	D	0	Sylvilagus	tarsal calcaneu	distal half	1	R	f							mle	
1137	113	D	0	Sylvilagus	tibia	distal	1	L	f			?				mle	
1137	113	D	0	Sylvilagus	tibia	shaft	1	L				?				mle	
1130	113	D	0	Sylvilagus	tibia	distal	1	R	uL			P				mle	
1120	113	D	0	Sylvilagus	ulna	proximal quarte	1	L				?				mle	
1130	113	D	0	Sylvilagus	ulna	distal quarter	1	R	f							mle	
1130	113	D	0	Sylvilagus	ulna	proximal half	1	R	f			P				mle	
1117	113	D	2	Sylvilagus	vert lumbar	centrum	1		ff			P				mle	
1137	113	D	0	Sylvilagus	vert lumbar	lateral frag	1		?			P				mle	
1120	113	D	0	Sylvilagus	vert lumbar	lateral process	1		L			Y				mle	
1130	113	D	0	Thomomys	S frontal	complete	1		immat							rfr	
1130	113	D	0	Thomomys	humerus	proximal half	1	L	f							rfr	
1130	113	D	4	artiodactyl	scapula	blade frag	1		uL			Y	?	?		mle,er	refit questionable
1130	113	D	0	artiodactyl	shaft	frag	2					?				mle	
1137	113	D	4	artiodactyl	tarsal calcaneu	frag	1	R				?				sew	very chalky
1130	113	D	3	artiodactyl	vert lumbar 6	near complete	1		ff	M?		?				mle	old pronghorn?
1117	113	D	0	lagomorph?	Skull?	frag	1					?				le	
1137	113	D	0	lge bird	raidus	shaft frag	1	?								rfr	
1139	113	D	0	lge mammal	Skull	frag	1				B						
1139	113	D	0	lge mammal	Skull	frag	1					?				mle	
1120	113	D	0	lge mammal	cancel	frag	5									ver	
1137	113	D	0	lge mammal	costal	frag	1					?				le	
1117	113	D	0	lge mammal	platey	frag	3					P				le,er	
1137	113	D	0	lge mammal	rib	shaft	1									mle	not artio?
1137	113	D	0	lge mammal	rib	shaft frag	8					?				sew?	le,er
1120	113	D	0	lge mammal	rib	shaft	1	L				?				mle	Artio?
1137	113	D	0	lge mammal	shaft	flakes	5				R?	P				le	
1120	113	D	0	lge mammal	shaft	frag	1									le	
1117	113	D	0	lge mammal	shaft	frag	1					P				le	
1137	113	D	0	lge mammal	shaft	frag	3					Y				le	humerus?
1130	113	D	0	lge mammal	shaft	frag	1				B					le	
1120	113	D	0	lge mammal	shaft	frag	1				B					le	
1137	113	D	0	lge mammal	sternal	segment frag	2					?				le	
1130	113	D	0	lge mammal	unknown	frag	12					?				variable	
1137	113	D	0	lge mammal	unknown	frag	4					?				variable	
1130	113	D	0	med mammal	shaft	frag	1					?				mle	
1117	113	D	0	med/lge mammal	Skull	frag	1		vimm			?				vle,er	unk, no ID
1120	113	D	0	med/lge mammal	platey	frag	1					P				er,le	
1137	113	D	0	sm/med mammal	Skull?	frag	2					?				mle	
1137	113	D	0	sm/med mammal	shaft	frag	11					?				mle	
1117	113	D	0	sm/med mammal	shaft	frag	4					P				mle	
1120	113	D	0	sm/med mammal	unknown	frag	1				R					mle	
1149	114	D	0	Antilocapra	phalanx 3	complete	1		M	F?	R?	Y				le	
1146	114	D	0	Callipepla	carpometacarpus	complete	1	L				Y				mle	Gambel's?
1146	114	D	0	Cervus	sessamoid	complete	1		fL							rfr	checked artics.
1149	114	D	0	Lepus	S maxilla	near complete	1	L	f			?				le,mer	
1149	114	D	0	Lepus	S maxilla	near complete	1	R	f			?				le,mer	
1149	114	D	0	Lepus	S premaxilla	complete	1	L			R					mle	
1146	114	D	0	Lepus	femur	proximal half	1	R	f		R?	Y				mle	big
1146	114	D	0	Lepus	humerus	shaft	1	R								mle	
1146	114	D	0	Lepus	innominate	ischium	1	L	f							rfr	
1149	114	D	0	Lepus	innominate	near complete	1	L	f			Y				mle	
1146	114	D	0	Lepus	innominate	near complete	1	R	f		R?	Y				mle	
1146	114	D	2	Lepus	manubrium	anterior half	1				R	Y				le	
1149	114	D	0	Lepus	manusphalanx 1	complete	1		f							rfr	
1146	114	D	0	Lepus	metatarsal 5	complete	1	L	f			?				mle	
1149	114	D	0	Lepus	metatarsal 5	complete	1	R	f							rfr	
1146	114	D	0	Lepus	phalanx 1	near complete	1		f		B					le	
1146	114	D	0	Lepus	radius	complete	1	L	f.oLD			?				mle	Big!
1146	114	D	0	Lepus	radius	proximal half	1	L	f			P				mle	big
1149	114	D	0	Lepus	rib	blade frag	2				R	Y				mle	
1149	114	D	0	Lepus	rib	proximal frag	2					Y				mle	
1146	114	D	0	Lepus	rib	shaft frag	1					?				mle	
1146	114	D	0	Lepus	rib 1	near complete	1	L	f							rfr	
1149	114	D	0	Lepus	rib 12	near complete	1	L								rfr	
1146	114	D	0	Lepus	rib 2	complete	1	R	ff			?				mle	
1146	114	D	0	Lepus	rib 5	near complete	1	R	uu			P				mle	

Gallinas Springs LA1178 detailed faunal analysis listing: NFS/CGI mitigation of 1987. Diagnosis listing prepared 1989-90 by J. B. Bertram

Field Spec. #	Pool Set #	Sample	Refit #	Species	Element	Portion	Count	Side	Age-Fusion	Sex	Burn?	Cook?	Gnaw?	Cut?	Artifact	Taphonomy	Comments
1146	114	D	0	Lepus	rib 7	shaft	1	R				Y				mle	
1146	114	D	0	Lepus	scapula	blade frag	1	L				?				mle,mer	
1146	114	D	0	Lepus	scapula	distal half	1	R	f			P				mle	
1149	114	D	0	Lepus	scapula	near complete	1	R	L							mle,mre	
1146	114	D	0	Lepus	tarsal calcaneu	complete	1	L	fL			P				le	
1149	114	D	0	Lepus	vert lumbar	centrum frag	1		nearf			Y				mle	
1146	114	D	0	Lepus	vert lumbar	lateral proc fr	1					Y				mle	
1146	114	D	0	Lepus	vert lumbar 5	near complete	1		uu			Y				mle	
1146	114	D	0	Neotoma	femur	proximal half	1	L	f							rfr	
1149	114	D	0	Odocoileus	radius	proximal half	1	L	L	M						mle	
1146	114	D	0	Odocoileus	tibia	distal quarter	1	L	f	F?		P		B		mle	
1149	114	D	0	c Sturnella	coracoid	near complete	2	L								rfr	MNI=2
1149	114	D	0	c Sturnella	ulna	complete	1	R								rfr	
1146	114	D	0	Sylvilagus	S frontal	frag	1	R				P				mle	
1146	114	D	0	Sylvilagus	S mandible	anterior	1	L			R?	Y				mle	
1149	114	D	0	Sylvilagus	S mandible	anterior frag	1	L				?				rfr	MNI=3
1149	114	D	0	Sylvilagus	S mandible	anterior half	1	L	f			P				mle	
1146	114	D	0	Sylvilagus	S mandible	anterior	2	P				P				mle	MNI=3
1146	114	D	0	Sylvilagus	S mandible	central	2	P			R	Y				mle,mre	dark brown
1146	114	D	0	Sylvilagus	S mandible	anterior frag	1	R				P				mle	
1149	114	D	0	Sylvilagus	S mandible	anterior frag	1	R				?				rfr	
1149	114	D	0	Sylvilagus	S mandible	complete	1	R	f			P				mle	
1149	114	D	0	Sylvilagus	S maxilla	frag	1	L	L			P				mle	
1146	114	D	0	Sylvilagus	S parietal	complete	1	R				Y				mle	
1146	114	D	0	Sylvilagus	S premaxilla	spine	1	R	L			Y				mle	
1149	114	D	0	Sylvilagus	S temporal	frag	1	?				?				mle	
1149	114	D	0	c Sylvilagus	Skull?	frag	1					?				mle	
1146	114	D	0	Sylvilagus	femur	proximal half	1	L	f			?				rfr	
1146	114	D	0	Sylvilagus	femur	proximal shaftf	1	L				?				rfr	
1149	114	D	0	Sylvilagus	femur	proximal	1	R	f			Y				mle	
1146	114	D	0	Sylvilagus	fibulary	near complete	2	?				?				mle	
1149	114	D	0	Sylvilagus	humerus	distal frag	1	L	f			?					
1146	114	D	0	Sylvilagus	humerus	distal half	1	L	f			?				mle	
1149	114	D	0	Sylvilagus	humerus	distal half	1	L	f			?					
1149	114	D	0	Sylvilagus	humerus	proximal half	1	L	f							rfr	
1146	114	D	0	Sylvilagus	humerus	distal	1	R	f			?				mle	
1146	114	D	0	Sylvilagus	humerus	distal half	1	R	f			?				mle	
1149	114	D	0	Sylvilagus	humerus	proximal halfsh	1	R	u?			?					
1146	114	D	0	Sylvilagus	innominate	central	1	L	f			Y				le	
1149	114	D	0	Sylvilagus	innominate	ilium	1	R			B					mle	
1149	114	D	0	Sylvilagus	innominate	ilium frag	1	R			B					le	
1149	114	D	0	Sylvilagus	innominate	near complete	1	R	f			?				mle	
1146	114	D	0	Sylvilagus	metatarsal 2	complete	1	L	f			?				mle	
1146	114	D	0	Sylvilagus	metatarsal 2	complete	2	R	f			?				mle	
1149	114	D	0	Sylvilagus	metatarsal 2	complete	1	R	f			Y				mle	
1149	114	D	0	Sylvilagus	metatarsal 2	complete	1	R	f			P				le,er	
1149	114	D	0	Sylvilagus	metatarsal 3	complete	1	L	f							rfr	
1146	114	D	0	Sylvilagus	metatarsal 3	complete	1	L	f			?				mle	
1149	114	D	0	Sylvilagus	metatarsal 3	complete	1	R	f		R	Y				mle	
1146	114	D	0	Sylvilagus	metatarsal 3	complete	4	R	f			?				mle	MNI=5
1146	114	D	0	Sylvilagus	metatarsal 4	complete	1	L	u			?				mle	MNI=5
1146	114	D	0	Sylvilagus	metatarsal 4	complete	1	L	f			?				mle	
1149	114	D	0	Sylvilagus	metatarsal 4	complete	1	R	f			?				mle	
1146	114	D	0	Sylvilagus	metatarsal 4	complete	3	R	f			?				mle	
1149	114	D	0	Sylvilagus	metatarsal 4	complete	1	R	f			P				mle	
1146	114	D	0	Sylvilagus	metatarsal 5	complete	2	L	f			?				mle	
1149	114	D	0	Sylvilagus	pesphalanx 1	complete	1		f		R	Y				mle	
1146	114	D	0	Sylvilagus	phalanx 1	complete	2									rfr	
1149	114	D	0	Sylvilagus	radius	shaft frag	1					?				rfr	
1146	114	D	0	Sylvilagus	radius	complete	1	L	f			Y				mle	
1146	114	D	0	Sylvilagus	radius	proximal quarte	1	L			B					le	
1149	114	D	0	Sylvilagus	radius	complete	1	R	fu		R?	Y				mle	
1146	114	D	0	Sylvilagus	radius	complete	1	R	f			P				mle	snare damage?
1146	114	D	0	Sylvilagus	radius	proximal half	1	R	f			P				mle	
1146	114	D	0	Sylvilagus	rib	shaft frag	2					?				rfr	
1146	114	D	0	Sylvilagus	rib	shaft frag	3					P				mle	
1181	114	D	0	Sylvilagus	rib	shaft frag	1	?			R?	Y				mle	
1146	114	D	0	Sylvilagus	rib 2	complete	1	R	f			?				rfr	
1149	114	D	0	Sylvilagus	scapula	distal half	1	L	f			Y				mle	
1149	114	D	0	Sylvilagus	scapula	distal half	1	L	f			?				mle	

1149	114 D	0	Sylvilagus	scapula	near complete	1	L	f		?			mle	
1146	114 D	0	Sylvilagus	scapula	near complete	1	L	f		Y			mle	
1149	114 D	0	Sylvilagus	scapula	blade frag	1	R	f	R	Y			mle	
1149	114 D	0	Sylvilagus	scapula	near complete	1	R	f					rfr	
1149	114 D	0	Sylvilagus	scapula	near complete	1	R	f		P			mle	
1146	114 D	0	Sylvilagus	scapula	near complete	1	R	f		Y			mle	
1146	114 D	2	Sylvilagus	scapula	near complete	1	R	f		P			mle	
1149	114 D	0	Sylvilagus	scapula	near complete	1	R	f		P			mle	
1146	114 D	0	Sylvilagus	tarsal astragal	complete	1	L	f		?			mle	
1146	114 D	0	Sylvilagus	tarsal calcaneu	complete	1	L	f		?			mer,mle	
1149	114 D	0	Sylvilagus	tarsal calcaneu	complete	1	L	f	R	Y			mle	
1149	114 D	0	Sylvilagus	tarsal calcaneu	complete	1	L	f		?			mle	
1146	114 D	0	Sylvilagus	tibia	complete	1	L	uf		Y			mle	
1146	114 D	0	Sylvilagus	tibia	distal	1	L	u		P			mle	
1149	114 D	2	Sylvilagus	tibia	near complete	1	L	f		Y			mle	
1149	114 D	0	Sylvilagus	tibia	proximal	1	L	f		?			mle	
1149	114 D	2	Sylvilagus	tibia	proximal half	1	L	u					mle	
1149	114 D	0	Sylvilagus	tibia	proximal shaft	1	L			Y				
1146	114 D	0	Sylvilagus	tibia	shaft	1	L			P	sRRR		mle	
1149	114 D	0	Sylvilagus	tibia	complete	1	R	f		?			rfr	
1146	114 D	0	Sylvilagus	tibia	complete	1	R	ff					rfr	
1149	114 D	0	Sylvilagus	tibia	distal	1	R	f	R	Y			mle	
1146	114 D	0	Sylvilagus	tibia	distal frag	1	R	f	R?	Y			mle	
1146	114 D	0	Sylvilagus	tibia	proximal half	1	R	partf		?			mle	
1146	114 D	0	Sylvilagus	tibia	shaft	1	R			?			mle	
1149	114 D	0	Sylvilagus	tibia	shaft	1	R			Y			mle	
1149	114 D	0	Sylvilagus	ulna	shaft frag	1	?			Y			mle	
1149	114 D	0	Sylvilagus	ulna	distal half	1	L	f	R	Y			mle	
1146	114 D	0	Sylvilagus	ulna	distal half	2	L	partf		?			mle	
1146	114 D	0	Sylvilagus	ulna	distal quarter	1	L	f		Y			mle	
1146	114 D	0	Sylvilagus	ulna	proximal half	1	L	f		Y			mle	
1149	114 D	2	Sylvilagus	ulna	complete	1	R	f		?			mle	
1149	114 D	0	Sylvilagus	ulna	proximal half	1	R	f		?			rfr	
1146	114 D	0	Sylvilagus	vert	process frag	1							rfr	
1146	114 D	0	Sylvilagus	vert cervical 4	arch frag	1				?				
1146	114 D	0	Sylvilagus	vert lumbar	lateral frag	2				Y			mle	
1149	114 D	2	Sylvilagus	vert lumbar 3	near complete	1		uu		?			mle	
1146	114 D	0	Sylvilagus	vert lumbar 3	near complete	1		ff					rfr	
1149	114 D	0	Sylvilagus	vert lumbar 4	centrum frag	1		ff		P			mle	
1149	114 D	0	Sylvilagus	vert lumbar 5	complete	1		fu		Y			mle	
1149	114 D	0	Sylvilagus	vert lumbar 6	near complete	1		fu		Y			mle	
1149	114 D	0	Sylvilagus	vert thorassic	arch	1		f		?			rfr	
1146	114 D	0	Sylvilagus	vert thorassic	near complete	1		uf		?			mle	
1149	114 D	0	Thomomys	humerus	distal half	1	R		R?	Y			mle	
1149	114 D	0	artiodactyl	S petrous	frag	1	?			P			er	
1149	114 D	0	artiodactyl	costal	complete	1		L		P			le	
1146	114 D	3	artiodactyl	rib	shaft frag	2	L			?			mle	
1146	114 D	0	artiodactyl	scapula	blade frag	1	?			?			mle	
1146	114 D	0	artiodactyl	tarsal calcaneu	anterior half	1	?	f,Old		?			le,sew?	
1146	114 D	0	artiodactyl	ulna	distal half	1	?			?	sRRR		mle	
1146	114 D	0	artiodactyl	vert cervical 7	arch	1		uuu		?			vle	fawn approx 1 month
1146	114 D	2	artiodactyl	vert thorassic	near complete	1		uu		Y			mle	
1146	114 D	0	cervid	S antler	frag	2							ver	
1146	114 D	2	eggshell	fragment		1				?			le	
1180	114 D	0	lge mammal	cancella	frag	1				?			mer	
1149	114 D	0	lge mammal	platey	frag	1				Y			le,ver	
1144	114 D	0	lge mammal	platey	frag	1			R?	P			er	
1149	114 D	0	lge mammal	platey	frag	1							rfr	
1146	114 D	0	lge mammal	rib	frag	1								
1146	114 D	0	lge mammal	rib	frag	1			R				le,er	1146
1149	114 D	0	lge mammal	rib?	frag	1				Y			mle	
1146	114 D	0	lge mammal	shaft	flake	1				Y		B	mle	
1149	114 D	0	lge mammal	shaft	flakes	14			R?	Y			mle	
1146	114 D	0	lge mammal	shaft	frag	4				P		B	mle	
1146	114 D	0	lge mammal	shaft	frag	2			B				le	
1149	114 D	0	lge mammal	shaft	frag	3			B				er	
1146	114 D	0	lge mammal	shaft	frag	3			R				mle	
1146	114 D	0	lge mammal	unknown	frag	3				?			mle	
1146	114 D	0	sm passerine	sternum	near complete	1							le	
1146	114 D	0	sm passerine	ulna	shaft frag	1							vfr	
1149	114 D	0	sm/med mammal	platey	frag	12				P			variable	
1146	114 D	0	sm/med mammal	platey	frag	4				P			mle	
1149	114 D	0	sm/med mammal	platey	frag	12				P			variable	
1146	114 D	0	sm/med mammal	shaft	frag	32				Y			mle	
1149	114 D	0	sm/med mammal	shaft	frag	13				P			variable	
1146	114 D	0	sm/med mammal	shaft	frag	4			B				mle	

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Field Spec. #	Pool Sat #	Sample	Refit #	Species	Element	Portion	Count	Side	Age-Fusion	Sex	Burn?	Cook?	Gnaw?	Cut?	Artifact	Taphonomy	Comments
1146	114	D	0	small bird	sternum	frag	1									mle	
1146	114	D	0	unknown	platey	frag	2				B					le	
1163	115	D	0	c Ammospermophilu	tibia	complete	1	R	uf			P				mle	or comp. sm. sciurid
1163	115	D	2	Antiloc/Odocoil	femur	distal	1	L	Lu		R	Y				vle	
1163	115	D	0	Antilocapra	S cranium	posterior frag	1	L	f			?				vle,er	
1163	115	D	0	Antilocapra	S cranium	posterior frag	1	R	f			?				vle,er	
1163	115	D	0	Antilocapra	S lachrimal	near complete	1	L	u			?				vle,er	
1163	115	D	0	Antilocapra	S mandible	ascending ramus	1	L	Limma			?				mle	
1163	115	D	0	Antilocapra	S mandible	ascending ramus	1	R	Old			Y				mle	
1166	115	D	0	Antilocapra	metacarpal	distal epiphysi	1	?	uL			Y				mle	
1166	115	D	0	Antilocapra	phalanx 1	complete	1		f			P				mle	
1163	115	D	0	Antilocapra	phalanx 3	complete	1					P				le	
1170	115	D	0	Antilocapra	phalanx 3	complete	1		L			P				le,mer	
1163	115	D	0	Antilocapra	radius	proximal half	1	L	L		R?	Y				le	
1166	115	D	0	Antilocapra	sessamoid	complete	1	?	M.			?				mle	
1163	115	D	0	Antilocapra	tarsal astragal	complete	1	L	f			?				mle	
1166	115	D	2	Lepus	S mandible	near complete	1	R	M/L		R	P				mle	
1163	115	D	0	Lepus	S premaxilla	frag	1	R	L							le,er	big
1166	115	D	0	Lepus	S zygoma	frag	1	L				Y				mle	
1170	115	D	4	Lepus	femur	proximal half	1	L			R?	Y				mle	
1163	115	D	0	Lepus	humerus	distal half	1	L	f		R?	Y	RR			mle	
1163	115	D	0	Lepus	humerus	distal half	1	R	f			Y				mle	big
1170	115	D	0	Lepus	humerus	proximal shaft	1	R			R?	Y				mle,sew?	
1166	115	D	0	Lepus.	metacarpal 2	complete	1	R	f		R	P				mle	
1163	115	D	0	Lepus	metacarpal 3	complete	1	R	f			?				rfr	big
1163	115	D	0	Lepus	rib	head frag	1	?	f							rfr	big
1162	115	D	0	c Lepus	rib	blade frag	1	L?			B						
1163	115	D	0	Lepus	scapula	distal half	1	L	fL			Y	RR			mle	big
1166	115	D	0	Lepus	scapula	near complete	1	R	M/L		R?	Y				mle	
1163	115	D	0	Lepus	vert lumbar 6	near complete	1		ffL							rfr,re	big
1163	115	D	0	Odocoileus	phalanx 3	complete	1					P				le	
1170	115	D	0	Odocoileus?	rib 1	proximal frag	1	L	L	M?		?				le,er,	sew?
1163	115	D	0	Sciurus aberti	innominate	ilium	1	R	f		B						
1163	115	D	0	Sylvilagus	S auditory	frag	1	?			R?	Y				mle,ver	
1163	115	D	3	Sylvilagus	S frontal	near complete	2	P				Y				le,er	
1163	115	D	0	Sylvilagus	S mandible	anterior half	1	L	M		R	P				mle	
1163	115	D	0	Sylvilagus	S nasal	complete	1	R				?				mle	
1166	115	D	0	Sylvilagus	femur	shaft frag	1	L				P				mle	
1166	115	D	0	Sylvilagus	femur	proximal half	1	R				?	RR			mle,er	
1163	115	D	0	Sylvilagus	humerus	distal	1	R	f			P				mle	
1163	115	D	0	Sylvilagus	humerus	distal	1	R	f		R	P				mle	
1166	115	D	0	Sylvilagus	innominate	central	1	L	f			Y				mle	
1163	115	D	0	Sylvilagus	innominate	ischium frag	1	R			B						
1170	115	D	0	Sylvilagus	metapodial	distal half	1		f							rfr	
1163	115	D	0	Sylvilagus	metatarsal 2	complete	1	R	u			Y				mle	
1163	115	D	0	Sylvilagus	metatarsal 3	complete	1	L	u			P				mle	
1163	115	D	0	Sylvilagus	metatarsal 3	complete	1	L	f		R?	P	RR			le	
1163	115	D	0	Sylvilagus	metatarsal 3	complete	1	L	u			Y				mle	
1166	115	D	0	Sylvilagus	metatarsal 3	complete	1	R	f			P				mle	
1163	115	D	0	Sylvilagus	metatarsal 3	complete	1	R	f							rfr	
1163	115	D	0	Sylvilagus	metatarsal 4	complete	1	L	f							rfr	
1163	115	D	0	Sylvilagus	metatarsal 4	complete	1	L	u		R?	Y				mle	
1166	115	D	0	Sylvilagus	metatarsal 4	complete	1	R	f			P				mle	
1163	115	D	0	Sylvilagus	metatarsal 4	complete	1	R	f			?				rfr	
1163	115	D	0	Sylvilagus	metatarsal 5	complete	1	R	f			?				mle	
1163	115	D	0	Sylvilagus	radius	complete	1	R	f			Y				mle	
1163	115	D	0	Sylvilagus	rib 2	complete	1	R	f		R?	Y				mle	
1166	115	D	0	Sylvilagus	scapula	distal	1	L	f			?				mle	
1166	115	D	0	Sylvilagus	scapula	distal half	1	L	f			?				mle	
1170	115	D	2	Sylvilagus	scapula	near complete	1	L	f			Y				mle	
1166	115	D	0	Sylvilagus	scapula	distal half	1	R	f			P				mle	
1163	115	D	0	Sylvilagus	tarsal calcaneu	complete	1	R	f			P				mle,mer	
1166	115	D	0	Sylvilagus	tarsal calcaneu	near complete	1	R	?			Y				mle,er	
1166	115	D	0	c Sylvilagus	tibia	shaft frag	1	?				Y				mle	
1166	115	D	0	Sylvilagus	tibia	distal quarter	1	L	u			P				mle	
1170	115	D	0	Sylvilagus	tibia	proximal	1	L	f			?				rfr	
1163	115	D	0	Sylvilagus	tibia	distal half	1	R	f			Y				mle	
1170	115	D	0	Sylvilagus	tibia	proximal + shaf	1	R	f			?				rfr	
1163	115	D	0	Sylvilagus	tibia	shaft	1	R	M			Y				mle	
1163	115	D	0	Sylvilagus	ulna	distal half	1	R	f			Y				mle	

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Field Spec. #	Pool Set #	Sample	Refit #	Species	Element	Portion	Count	Side	Age-Fusion	Sex	Burn?	Cook?	Gnaw?	Cut?	Artifact	Taphonomy	Comments
1170	115	D	0	Sylvilagus	vert atlas	complete	1		f		R?	Y				mle	
1163	115	D	0	Sylvilagus	vert lumbar	process frag	1					P				mle,mer	
1163	115	D	3	Thomomys	Skull	anterior half	1				R	Y				mle	
1166	115	D	0	artiodactyl	S Tooth	frag	1	?			R?	P				le	Antilo?
1166	115	D	2	artiodactyl	costal	complete	1	?				?				le	porous, match
1163	115	D	0	artiodactyl	patella	near complete	1		?			Y				le,er	
1163	115	D	0	artiodactyl	rib	shaft frag	2				R					le	
1163	115	D	0	artiodactyl	rib	shaft frag	2				B					le	
1163	115	D	0	artiodactyl	rib	shaft frag	3					Y				vle	
1163	115	D	0	artiodactyl	rib	head frag	1	R	f							rfr	
1163	115	D	0	artiodactyl	rib	shaft frag	1	R				P				le	
1163	115	D	0	artiodactyl	sternal	segment	1		u							mle	
1163	115	D	0	lagomorph	S occipital	condyle frag	1	?			R	P				le,er	
1163	115	D	0	lge mammal	S Tooth	root frag	1					?					
1163	115	D	0	lge mammal	S cranium	frag	1					?				mle	
1163	115	D	0	lge mammal	platey	frag	2				R?	P				vle,ver	
1166	115	D	0	lge mammal	shaft	flake	7					P				mle	
1170	115	D	0	lge mammal	shaft	flakes	6					Y		B			
1163	115	D	0	lge mammal	shaft	flakes	3					P				mle	
1163	115	D	0	lge mammal	shaft	flakes	1				R					le	
1163	115	D	0	lge mammal	shaft	frag	6				R	P				le	
1166	115	D	0	lge mammal	shaft	frag	1					?				mle	
1163	115	D	0	lge mammal	shaft	frag	1							Y	ART		bone die blank
1163	115	D	0	lge mammal	shaft	frag	2					P				mle	
1166	115	D	0	med bird	tibiotarsus	distal quarter	1	L	f							rfr	
1170	115	D	0	sm/med mammal	platey	frag	2					P				mle	
1166	115	D	0	sm/med mammal	platey	frag	1					?				variable	
1170	115	D	0	sm/med mammal	shaft	frag	2					?				le,er	Syly? tib?
1166	115	D	0	sm/med mammal	shaft	frag	2					P				mle	
1163	115	D	0	sm/med mammal	shaft	frag	8					P				mle	
1163	115	D	0	sm/med mammal	shaft	frag	1				B						
1163	115	D	0	sm/med mammal	unknown	frag	10					?				variable	
1129	116	D	0	artiodactyl	rib	shaft	1	R				?	D?			mle	
1129	116	D	0	lge mammal	rib	proximal shaftf	1									mle	
1129	116	D	2	lge mammal	rib	shaft frag	1									mle	
1129	116	D	0	lge mammal	shaft	frag	1									mle	
1129	116	D	0	med/lge mammal	shaft	frag	1									le	Lepus radius?
1181	117	D	2	Antilocapra	S mandible	near complete	1	L	Old	M		P				mle	senile buck
1181	117	D	0	Antilocapra	carpal magnotra	complete	1	R	L							mle	
1181	117	D	0	Antilocapra	phalanx 1	complete	1		f			?				mle	
1181	117	D	0	Antilocapra	phalanx 2	complete	1		f			?				mle	
1181	117	D	0	Antilocapra	phalanx 3	complete	1		f		R	P				mle	
1181	117	D	0	Antilocapra	sessamoids	complete	2		f							mle	
1181	117	D	0	c Callipepla	femur	distal	1	L	f			Y				mle	
1181	117	D	0	c Callipepla	humerus	distal + shaft	1	R	f		R?	Y				mle	
1181	117	D	2	Lepus	S maxilla	frag	1	L			R	P				le,er	Broke before roasting
1181	117	D	0	Lepus	humerus	shaft frag	1	L				P				le	
1181	117	D	0	Lepus	humerus	distal half	1	R			R?	Y				mle	
1181	117	D	0	Lepus	innominate	near complete	1	L	f			P				mle	
1181	117	D	0	Lepus	pesphalanx 1	complete	1		f							rfr	
1181	117	D	0	Lepus	rib	shaft frag	1	L			B					mle	
1181	117	D	0	Lepus	rib 8	proximal half	1	L	fu			?				mle	
1181	117	D	0	Lepus	vert lumbar 6	frag	1		fu		R?	Y				mle	
1181	117	D	0	Sylvilagus	S frontal	complete	2	P			R?	Y				mle,er	
1181	117	D	0	Sylvilagus	S mandible	anterior frag	1	R	L			Y				mle	MNI=3
1181	117	D	0	Sylvilagus	S mandible	anterior half	1	R	L		?	Y				mle	
1181	117	D	0	Sylvilagus	S mandible	complete	1	R	L		B	Y				rfr	
1181	117	D	0	Sylvilagus	femur	distal	1	R	f							mle	
1181	117	D	0	Sylvilagus	humerus	distal	1	L	f			?				mle	
1181	117	D	0	Sylvilagus	humerus	distal	1	R	f							mle	
1181	117	D	0	Sylvilagus	metatarsal 2	complete	1	R	partf			P				mle	
1181	117	D	0	Sylvilagus	metatarsal 4	near complete	1	L	partf		R?	Y				mle	
1181	117	D	0	Sylvilagus	radius	distal half	1	R	f			P				mle	
1181	117	D	0	Sylvilagus	rib 10	near complete	1	L	f			?				mle	
1181	117	D	0	Sylvilagus	rib 4	near complete	1	R	?			Y				mle	
1181	117	D	0	Sylvilagus	scapula	distal half	1	R	f			?				mle	
1181	117	D	0	Sylvilagus	scapula	near complete	1	R	f		R	P				mle	
1181	117	D	0	Sylvilagus	tibia	distal + shaft	1	L	f			P				mle	
1181	117	D	0	Sylvilagus	tibia	proximal half	1	L	u?			Y				mle	
1181	117	D	0	artiodactyl	S T incisor	near complete	1					?				mer	

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1181	117	D	0	artiodactyl	humerus	distal shaft fr	1	L				?				mle	
1181	117	D	0	artiodactyl	metacarpal	distal half	1	?	u			Y				le	
1181	117	D	0	artiodactyl	metapodial	shaft frag	1					Y				le,er	
1181	117	D	0	artiodactyl	rib	shaft	1	?								mle	
1181	117	D	0	artiodactyl	rib 6	shaft frag	1	L			R?	P				mle	
1181	117	D	0	lge mammal	cancella	frag	2					?				le,er	
1181	117	D	0	lge mammal	platey	frag	2					P				le,er	
1181	117	D	0	lge mammal	rib	distal frag	1					?				vle,er	
1181	117	D	0	lge mammal	shaft	flakes	3				R	P				le	
1181	117	D	0	lge mammal	shaft	frag	2				B					le	
1181	117	D	0	lge mammal	shaft	frag	2				R?	Y				le	
1181	117	D	0	lge mammal	shaft	frag	7				R	P				le	
1181	117	D	0	med passerine?	ulna	distal + shaft	1	L								rfr	or woodpecker?
1181	117	D	2	med sciurid	S mandible	anterior frag	1	R			R	P				mle	
1181	117	D	0	sm/med mammal	platey	frag	6					?				le,er	
1181	117	D	0	sm/med mammal	shaft	frag	1				B					mle	
1181	117	D	0	sm/med mammal	shaft	frag	8				R	P				mle	
1155	119	D	0	c Antilocapra	S auditory	bulla	1	R									
1155	119	D	0	Antilocapra	S mandible	near complete	1	L	Old	F		Y				mle	
1155	119	D	0	Antilocapra	humerus	distal quarter	1	L						B	ART	mle	exp use?
1155	119	D	0	Antilocapra	manubrium	near complete	1		f		R?	Y				mle	
1155	119	D	0	Antilocapra	phalanx 1	complete	1		f		R?	Y				mle	
1155	119	D	0	Lepus	S temporal	near complete	1	R	L			P				mle	
1152	119	D	0	Lepus	S Tooth	near complete	2					P				mer	
1155	119	D	0	Lepus	S premaxilla	complete	1	R			R	Y				mle	
1152	119	D	0	Lepus	S zygoma	frag	1	R				?				mle	
1155	119	D	0	Lepus	femur	shaft frag	1	L				?				mle	
1155	119	D	0	Lepus	femur	shaft	1	R				?				mle	
1155	119	D	0	Lepus	fibulary	shaft frag	1	?				P				mle	
1155	119	D	0	Lepus	innominate	complete	1	L	L			?				mle	
1155	119	D	0	Lepus	manubrium	complete	1					P				mle	
1152	119	D	0	Lepus	metatarsal 2	complete	1		f			Y				rfr	
1152	119	D	0	Lepus	metatarsal 3	complete	1		f			Y				rfr	
1155	119	D	0	Lepus	metatarsal 3	complete	1	L	f							rfr	
1152	119	D	0	Lepus	metatarsal 4	complete	1		f			Y				rfr	
1152	119	D	0	Lepus	metatarsal 5	complete	1		f			Y				rfr	
1152	119	D	0	Lepus	pesphalanx 1D2	complete	1		f			Y				rfr	
1152	119	D	0	Lepus	pesphalanx 1D4	complete	1		f			Y				rfr	
1152	119	D	0	Lepus	pesphalanx 1D5	complete	1		f			Y				rfr	
1152	119	D	0	Lepus	phalanx 1	complete	1		f			?				rfr	
1155	119	D	0	Lepus	radius	distal quarter	1	L	f			P				mle	
1155	119	D	0	Lepus	radius	proximal half	1	L	f			Y				mle	
1155	119	D	0	Lepus	radius	proximal half	1	R	f							rfr	
1155	119	D	0	Lepus	rib	shaft frag	1	L				Y				mle	
1152	119	D	0	c Lepus	rib	shaft frag	1	L			R	Y				mle	
1155	119	D	0	Lepus	rib	shaft frag	1	L				P				mle	
1152	119	D	2	Lepus	rib 11	complete	1	L	partf							le	
1155	119	D	0	Lepus	rib 3	near complete	1	R				Y				mle	
1152	119	D	0	Lepus	rib 5	proximal half	1	L	f			?				le,mer	
1155	119	D	0	Lepus	scapula	near complete	1	L	L			?				mle	
1155	119	D	0	Lepus	tarsal calcaneu	complete	1	R	f							le	
1155	119	D	0	Lepus	tibia	complete	1	R	L			P				mle	
1155	119	D	0	Lepus	tibia	distal epiphysi	1	R	Lu			P				le	
1152	119	D	0	Lepus	tibia	proximal half	1	R	f		R	Y				mle	
1155	119	D	0	Lepus	ulna	proximal half	1	L	partf			P				mle	
1155	119	D	0	Lepus	vert lumbar	lateral process	1	L			R	P				mle	
1155	119	D	0	Meleagris	fibulary	near complete	1	L	M			?				mle	fem? imm male?
1155	119	D	0	Neotoma	S mandible	near complete	2	P	M/L			P				mle	
1152	119	D	0	Neotoma	S mandible	complete	1	R	L			?					N.albigula?
1155	119	D	0	Odocoileus	metacarpal	proximal quarte	1	L	f		R?	Y				le,mer	
1155	119	D	0	Odocoileus	metatarsal	distal quarter	1	R	f	M		Y				mle	
1155	119	D	0	Odocoileus	phalanx 1	complete	1		f			?	RR			mle	
1155	119	D	0	Odocoileus	phalanx 2	complete	1		f							mle	
1152	119	D	0	Odocoileus	phalanx 2	distal half	1				B			B		mle	
1155	119	D	0	Sylvilagus	S mandible	anterior half	1	L	f		R?	Y				mle	
1152	119	D	2	Sylvilagus	S mandible	near complete	1	L			R	Y				mle	
1155	119	D	0	Sylvilagus	S mandible	proximal half	2	L				Y				mle	
1155	119	D	0	Sylvilagus	S mandible	anterior half	2	P	f			P				mle	MNI=4
1155	119	D	0	Sylvilagus	S mandible	dentary frag	1	R			R?	Y				mle	
1155	119	D	0	Sylvilagus	S mandible	dentary frag	1	R				P				mle	

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Field Spec. #	Pool Set #	Sample	Refit #	Species	Element	Portion	Count	Side	Age-Fusion	Sex	Burn?	Cook?	Gnaw?	Cut?	Artifact	Taphonomy	Comments
1152	119	D	2	Sylvilagus	S mandible	near complete	1	R				P				mle	MNI=2
1155	119	D	0	Sylvilagus	S mandible	near complete	1	R			R?	Y				mle	
1155	119	D	0	Sylvilagus	S mandible	proximal quarte	1	R			R	Y				mle	
1152	119	D	0	Sylvilagus	S mandible	ramus frag	1	R				Y				mle	MNI=2
1155	119	D	0	Sylvilagus	S nasal	near complete	2	P								rfr	
1152	119	D	2	Sylvilagus	S occipital	basal	1		f			P				mle	
1155	119	D	0	Sylvilagus	S premaxilla	near complete	1	R			R	Y				mle	
1152	119	D	0	Sylvilagus	S sphenoid	frag	1					P				mle	
1152	119	D	0	Sylvilagus	S temporal	near complete	1	L				Y				mle	
1155	119	D	8	Sylvilagus	Skull	central	3		M/L			Y				mle	
1155	119	D	0	Sylvilagus	femur	distal	1	L	f			?				mle	
1155	119	D	2	Sylvilagus	femur	distal half	1	L	u		R?	Y				le	
1155	119	D	0	Sylvilagus	femur	distal quarter	1	L	u			?				mle	
1155	119	D	0	Sylvilagus	femur	proximal + shaf	1	L	f		R?	Y				mle	
1152	119	D	0	Sylvilagus	femur	proximal quarte	1	L	f		R?	Y				mle	
1155	119	D	0	Sylvilagus	femur	distal half	1	R	f			P				mle	
1155	119	D	0	Sylvilagus	femur	proximal quarte	1	R	f			?				mle	
1155	119	D	0	Sylvilagus	femur	proximal quarte	1	R	f		R	P				mle	
1152	119	D	0	Sylvilagus	fibulary	near complete	1	?				?				mle	
1155	119	D	0	Sylvilagus	humerus	distal	1	L	f			Y				mle	
1152	119	D	0	Sylvilagus	humerus	proximal epiphy	1	L	u			Y				mle	
1155	119	D	0	Sylvilagus	humerus	proximal half	1	L	f			P				mle	
1152	119	D	0	Sylvilagus	humerus	proximal half	1	L	f		B					le	
1152	119	D	0	Sylvilagus	humerus	distal	1	R	f			P				mle	
1155	119	D	0	Sylvilagus	humerus	distal	2	R	f			P				rfr	
1155	119	D	0	Sylvilagus	humerus	distal	2	R	f		R	Y				mle	
1152	119	D	0	Sylvilagus	innominate	ilium frag	1	L			R	P				mle	
1155	119	D	0	Sylvilagus	innominate	near complete	2	L				?					MNI=3
1155	119	D	0	Sylvilagus	innominate	near complete	1	L			R	Y				mle	MNI=3
1152	119	D	0	Sylvilagus	innominate	acetabulum frag	1	R	f		R	P				mle	
1155	119	D	0	Sylvilagus	innominate	acetabulum frag	1	R	f								
1152	119	D	0	Sylvilagus	metacarpal	distal + shaft	1	?.	f		R?	Y				mle	
1155	119	D	0	Sylvilagus	metacarpal 4	complete	1	L	f							rfr	
1155	119	D	0	Sylvilagus	metatarsal	distal frag	2		f		R?	Y				mle	
1152	119	D	0	Sylvilagus	metatarsal 2	complete	1	L	f			P				mle	
1155	119	D	0	Sylvilagus	metatarsal 2	complete	1	L	f			P				mle	
1152	119	D	0	Sylvilagus	metatarsal 2	distal + shaft	1	L	f			Y				mle	MNI=3
1152	119	D	0	Sylvilagus	metatarsal 2	proximal half	1	L			R					mle	roast in flesh
1155	119	D	0	Sylvilagus	metatarsal 2	complete	1	R	f		R	Y				mle	
1152	119	D	0	Sylvilagus	metatarsal 3	complete	1	L	f			Y				mle	
1155	119	D	0	Sylvilagus	metatarsal 3	complete	1	L	f							rfr	
1155	119	D	0	Sylvilagus	metatarsal 3	complete	1	L	f		R?	Y				mle	
1152	119	D	0	Sylvilagus	metatarsal 3	proximal half	1	L			R					mle	roast in flesh
1152	119	D	0	Sylvilagus	metatarsal 3	proximal half	1	L				P				mle	
1155	119	D	0	Sylvilagus	metatarsal 3	complete	1	R	f		R	Y				mle	
1152	119	D	0	Sylvilagus	metatarsal 4	complete	1	L	f		R					mle	roast in flesh
1155	119	D	0	Sylvilagus	metatarsal 5	complete	1	R	f		R	Y				mle	
1152	119	D	0	Sylvilagus	metatarsal 5	complete	2	R	f			?				mle	
1152	119	D	0	Sylvilagus	phalanx 1	complete	5		f			?				rfr	
1155	119	D	0	Sylvilagus	radius	complete	1	L	ff		R	Y				mle	
1155	119	D	2	Sylvilagus	radius	complete	1	L	ff			Y				mle	MNI=5
1155	119	D	0	Sylvilagus	radius	distal half	1	L	f		R	Y				mle	
1155	119	D	0	Sylvilagus	radius	proximal + shaf	2	L	f			Y				mle	
1152	119	D	0	Sylvilagus	radius	shaft	1	L				?				mle	
1155	119	D	0	Sylvilagus	radius	distal half	1	R	f			?				mle	
1152	119	D	0	Sylvilagus	radius	proximal half	1	R				?				mle	
1155	119	D	0	Sylvilagus	rib	shaft frag	3					P				mle	
1152	119	D	0	Sylvilagus	rib	shaft frag	3					Y				mle	
1155	119	D	0	Sylvilagus	rib 2	complete	2	P				?				mle	
1152	119	D	0	Sylvilagus	rib 6	complete	1	R	f			P				mle	
1155	119	D	2	Sylvilagus	scapula	distal half	1					?				rfr	
1155	119	D	0	Sylvilagus	scapula	distal half	1	L			B					le	
1155	119	D	0	Sylvilagus	scapula	distal half	2	L			R					mle	
1155	119	D	0	Sylvilagus	scapula	distal half	2	L				Y				mle	MNI=6
1152	119	D	0	Sylvilagus	scapula	near complete	1	L	f		R?	Y				mle	
1152	119	D	0	Sylvilagus	scapula	blade	1	R	f			P				mle	
1152	119	D	0	Sylvilagus	scapula	distal half	1	R	f			P				mle	
1155	119	D	0	Sylvilagus	scapula	distal half	3	R				Y				mle	1 imm
1155	119	D	0	Sylvilagus	scapula	distal half	4	R			R					mle	MNI=7
1152	119	D	0	Sylvilagus	scapula	near complete	1	R	f			Y				mle	

Gallinas Springs LA1178 detailed faunal analysis listing: NFS/CGI mitigation of 1987. Diagnosis listing prepared 1989-90 by J. B. Bertram

Field Spec. #	Pool Set #	Sample	Refit #	Species	Element	Portion	Count	Side	Age-Fusion	Sex	Burn?	Cook?	Gnaw?	Cut?	Artifact	Taphonomy	Comments
1152	119	D	0	Sylvilagus	tarsal calcaneu	complete	1	L	f		B					le	
1155	119	D	0	Sylvilagus	tarsal calcaneu	distal half	1	L	L		B					mle	
1155	119	D	0	Sylvilagus	tarsal calcaneu	complete	2	P	f			?					
1152	119	D	0	Sylvilagus	tarsal calcaneu	complete	1	R	f		R?	Y				mle	
1152	119	D	0	Sylvilagus	tarsal calcaneu	complete	1	R	f			P				mle	
1155	119	D	0	Sylvilagus	tarsal calcaneu	proximal half	1	R			R	Y				er	
1155	119	D	0	Sylvilagus	tibia	complete	1	L	ff			P				mle	
1155	119	D	0	Sylvilagus	tibia	distal	1	L	f			Y				mle	
1155	119	D	0	Sylvilagus	tibia	distal	1	L	f			?				mle	
1155	119	D	0	Sylvilagus	tibia	proximal half	1	L	f			?				rfr	
1155	119	D	0	Sylvilagus	tibia	shaft	1	L			R	Y				rfr	
1152	119	D	0	Sylvilagus	tibia	complete	1	R	ff			Y					
1155	119	D	0	Sylvilagus	tibia	complete	1	R	ff			?				rfr	
1155	119	D	0	Sylvilagus	tibia	distal	1	R	f		R?	Y				mle	
1152	119	D	0	Sylvilagus	tibia	distal quarter	1	R	u		R?	Y				mle	
1152	119	D	0	Sylvilagus	tibia	proximal half	1	R	f			Y				mle	MNI=5
1152	119	D	0	Sylvilagus	tibia	shaft	1	R				Y				mle	
1152	119	D	0	Sylvilagus	tibia	shaft	1	R				Y				mle	
1155	119	D	0	Sylvilagus	tibia	shaft frag	1	R				P				mle	
1155	119	D	0	Sylvilagus	tibia	shaft frag	1	R				P				mle	
1155	119	D	0	Sylvilagus	ulna	distal half	1	L	f							rfr	
1155	119	D	0	Sylvilagus	ulna	distal quarter	1	L	uL		R?	Y				mle	
1155	119	D	0	Sylvilagus	ulna	proximal + shaf	1	L	?			P				mle	
1152	119	D	0	Sylvilagus	ulna	proximal half	1	L	?		R	Y				mle	
1152	119	D	0	Sylvilagus	ulna	proximal half	1	L	f			P				mle	
1155	119	D	0	Sylvilagus	ulna	shaft frag	1	L	?		R	Y				le	
1152	119	D	0	Sylvilagus	ulna	shaft frag	1	L	?			P				mle	
1152	119	D	0	Sylvilagus	ulna	complete	1	R	fu							rfr	
1155	119	D	0	Sylvilagus	ulna	distal half	1	R	f		R?	Y				mle	
1155	119	D	0	Sylvilagus	ulna	near complete	1	R	f?		R	Y				mle	
1152	119	D	0	Sylvilagus	ulna	proximal half	1	R	f		R?	Y				mle	
1152	119	D	0	Sylvilagus	ulna	shaft frag	1	R	?		R	P				mle	
1155	119	D	0	Sylvilagus	vert lumbar	lateral process	2				R?	Y				mle	
1152	119	D	0	Sylvilagus	vert lumbar 5	near complete	1		uu		R?	Y				mle	
1152	119	D	0	Sylvilagus	vert lumbar 6	near complete	1		fu		R?	Y				mle	
1152	119	D	0	Sylvilagus	vert thorassic	complete	1		fu			Y				mle	
1155	119	D	0	Sylvilagus	vert thorassic2	complete	1		uu			?				mle	
1155	119	D	0	Thomomys	S mandible	near complete	2	L			R?	Y				le	MNI=2
1155	119	D	0	Thomomys	femur	near complete	1	L	f-			?				mer	
1152	119	D	0	Thomomys	femur	proximal half	1	L	f							rfr	
1152	119	D	0	Thomomys	ulna	complete	1	R	fu			P				mle	
1155	119	D	0	artiodactyl	S T incisor	complete	1					?					
1152	119	D	0	artiodactyl	hyoid	frag	1					Y					
1152	119	D	2	artiodactyl	innominate	distal ischium	1	L						B		mle	
1152	119	D	0	artiodactyl	radius	shaft frag	1				BR					le	
1155	119	D	0	artiodactyl	rib	shaft frag	1					?				le	
1155	119	D	0	artiodactyl	rib	shaft	1	L			R?	Y				mle	immature?
1155	119	D	0	artiodactyl	rib	shaft	1	L				P				mle	
1152	119	D	2	artiodactyl	rib 10	shaft	1	L				Y				mle	
1155	119	D	2	artiodactyl	scapula	near complete	1	R	u		R	Y				le	antilo?
1155	119	D	0	artiodactyl	sternal	complete	2		f							mle	
1152	119	D	0	artiodactyl	ulna	shaft frag	1					P				mle	
1155	119	D	0	artiodactyl	vert	apophysis	1		u		R?	Y				mle	
1155	119	D	0	artiodactyl	vert cervical	lateral frag	1				R	Y				le	
1155	119	D	0	eggshell	fragment		2									le	
1155	119	D	0	jay?	S mandible	proximal half	1	L				?				le,er	
1155	119	D	0	lge bird	tarsal	splint frag	1					P				le	
1155	119	D	0	lge mammal	cancella	frag	1									ver	
1155	119	D	0	lge mammal	costal	near complete	1					?				mle	
1155	119	D	0	lge mammal	platey	frag	2					P					
1155	119	D	0	lge mammal	rib	frag	4				R	Y				mle	
1152	119	D	0	lge mammal	shaft	flake	10				R	Y				mle	
1155	119	D	0	lge mammal	shaft	flake	9					P				mle	
1155	119	D	0	lge mammal	shaft	flakes	4				R	Y		B		mle	
1155	119	D	0	lge mammal	shaft	flakes	8					P		B		mle	
1155	119	D	0	lge mammal	shaft	frag	5				B					le	
1153	119	D	0	lge mammal	shaft	frag	1							B		mle	
1155	119	D	0	lge mammal	shaft	frag	5					Y				mle	
1155	119	D	0	lge mammal	shaft	frag	2				B					mle	
1155	119	D	0	lge mammal	shaft	frag	3				R	Y				le	

Gallinas Springs LA1178 detailed faunal analysis listing: NFS/CGI mitigation of 1987. Diagnosis listing prepared 1989-90 by J. B. Bertram

Field Spec. #	Pool Set #	Sample	Refit #	Species	Element	Portion	Count	Side	Age-Fusion	Sex	Burn?	Cook?	Gnaw?	Cut?	Artifact	Taphonomy	Comments
1152	119	D	0	lge mammal	shaft	frag	3				B					le	
1152	119	D	0	lge mammal	unknown	unknown	1		u			P				mle	not recog.
1155	119	D	0	lge mammal	vert	frag	3					?				mle	
1152	119	D	0	sm cricetid	femur	complete	1	R	fu			Y				mle	Peromyscus?
1152	119	D	0	sm passerine	femur	complete	1	R	f			?					
1152	119	D	0	sm passerine	ulna	complete	1	R	f			?					
1155	119	D	0	sm/med mammal	platey	frag	11					?					
1155	119	D	0	sm/med mammal	platey	frag	6					Y				mle	
1152	119	D	0	sm/med mammal	platey	frag	26					P				variable	
1152	119	D	0	sm/med mammal	scapula	blade frag	1					P				mle	
1155	119	D	0	sm/med mammal	shaft	frag	3				R?	Y				mle	
1155	119	D	0	sm/med mammal	shaft	frag	12					P				mle	
1152	119	D	0	sm/med mammal	shaft	frag	7					P				variable	
1152	119	D	0	sm/med mammal	shaft	frag	4									rfr	

APPENDIX H.3

FAUNAL CHI-SQUARE LISTINGS

2-Way Contingency Table

ANTILO (rows) by ODOC (columns); cell entries: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

ANTILO	ODOC 0	ODOC 1	TOTAL
0	11 7.8 28.2 68.8 57.9	5 8.2 12.8 31.3 25.0	16 41.0
1	8 11.2 20.5 34.8 42.1	15 11.8 38.5 65.2 75.0	23 59.0
TOTAL	19 48.7	20 51.3	39 100.0

```
CHI SQUARE     =   4.36  with DF=  1       p value = 0.037
YATES CHI SQ   =   3.10  with DF=  1       p value = 0.079
FISHER EXACT TEST   (one tail)             p value = 0.038
```

2-Way Contingency Table

ANTILO (rows) by OVIS (columns); cell entries: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

ANTILO	OVIS 0	OVIS 1	TOTAL
0	15 14.4 38.5 93.8 42.9	1 1.6 2.6 6.3 25.0	16 41.0
1	20 20.6 51.3 87.0 57.1	3 2.4 7.7 13.0 75.0	23 59.0
TOTAL	35 89.7	4 10.3	39 100.0

```
CHI SQUARE     =   0.47  with DF=  1       p value = 0.492
YATES CHI SQ   =   0.02  with DF=  1       p value = 0.880
FISHER EXACT TEST   (one tail)             p value = 0.452
```

2-Way Contingency Table

ANTILO / CER_BIS (cells: FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT)

ANTILO	CER_BIS 0	CER_BIS 1	TOTAL
0	15 13.5 38.5 93.8 45.5	1 2.5 2.6 6.3 16.7	16 41.0
1	18 19.5 46.2 78.3 54.5	5 3.5 12.8 21.7 83.3	23 59.0
TOTAL	33 84.6	6 15.4	39 100.0

CHI SQUARE = 1.74 with DF= 1 p value = 0.188
YATES CHI SQ = 0.75 with DF= 1 p value = 0.386
FISHER EXACT TEST (one tail) p value = 0.196

2-Way Contingency Table

ANTILO / ARTIO (cells: FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT)

ANTILO	ARTIO 0	ARTIO 1	TOTAL
0	6 4.1 15.4 37.5 60.0	10 11.9 25.6 62.5 34.5	16 41.0
1	4 5.9 10.3 17.4 40.0	19 17.1 48.7 82.6 65.5	23 59.0
TOTAL	10 25.6	29 74.4	39 100.0

CHI SQUARE = 2.00 with DF= 1 p value = 0.158
YATES CHI SQ = 1.09 with DF= 1 p value = 0.298
FISHER EXACT TEST (one tail) p value = 0.149

2-Way Contingency Table

ANTILO / LGMAM (cells: FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT)

ANTILO \ LGMAM	0	1	TOTAL
0	1 0.8 2.6 6.3 50.0	15 15.2 38.5 93.8 40.5	16 41.0
1	1 1.2 2.6 4.3 50.0	22 21.8 56.4 95.7 59.5	23 59.0
TOTAL	2 5.1	37 94.9	39 100.0

CHI SQUARE = 0.07 with DF= 1 p value = 0.791
YATES CHI SQ = 0.22 with DF= 1 p value = 0.636
FISHER EXACT TEST (one tail) p value = 0.659

2-Way Contingency Table

ANTILO / MDLGMAM (cells: FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT)

ANTILO \ MDLGMAM	0	1	TOTAL
0	9 8.2 23.1 56.3 45.0	7 7.8 17.9 43.8 36.8	16 41.0
1	11 11.8 28.2 47.8 55.0	12 11.2 30.8 52.2 63.2	23 59.0
TOTAL	20 51.3	19 48.7	39 100.0

CHI SQUARE = 0.27 with DF= 1 p value = 0.605
YATES CHI SQ = 0.04 with DF= 1 p value = 0.848
FISHER EXACT TEST (one tail) p value = 0.424

2-Way Contingency Table

ANTILO / MELEA
FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

ANTILO \ MELEA	0	1	TOTAL
0	12 10.3 30.8 75.0 48.0	4 5.7 10.3 25.0 28.6	16 41.0
1	13 14.7 33.3 56.5 52.0	10 8.3 25.6 43.5 71.4	23 59.0
TOTAL	25 64.1	14 35.9	39 100.0

```
CHI SQUARE     =  1.40  with DF=  1       p value = 0.237
YATES CHI SQ   =  0.71  with DF=  1       p value = 0.399
FISHER EXACT TEST  (one tail)             p value = 0.200
```

2-Way Contingency Table

ANTILO / LEPUS
FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

ANTILO \ LEPUS	0	1	TOTAL
0	8 4.5 20.5 50.0 72.7	8 11.5 20.5 50.0 28.6	16 41.0
1	3 6.5 7.7 13.0 27.3	20 16.5 51.3 87.0 71.4	23 59.0
TOTAL	11 28.2	28 71.8	39 100.0

```
CHI SQUARE     =  6.36  with DF=  1       p value = 0.012
YATES CHI SQ   =  4.67  with DF=  1       p value = 0.031
FISHER EXACT TEST  (one tail)             p value = 0.015
```

2-Way Contingency Table

ANTILO: rows; SYLV: columns

FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

ANTILO \ SYLV	0	1	TOTAL
0	3 1.2 7.7 18.8 100.0	13 14.8 33.3 81.3 36.1	16 41.0
1	0 1.8 0.0 0.0 0.0	23 21.2 59.0 100.0 63.9	23 59.0
TOTAL	3 7.7	36 92.3	39 100.0

CHI SQUARE = 4.67 with DF= 1 p value = 0.031
YATES CHI SQ = 2.40 with DF= 1 p value = 0.122
FISHER EXACT TEST (one tail) p value = 0.061

2-Way Contingency Table

ANTILO: rows; SMMEDMAM: columns

FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

ANTILO \ SMMEDMAM	0	1	TOTAL
0	10 5.3 25.6 62.5 76.9	6 10.7 15.4 37.5 23.1	16 41.0
1	3 7.7 7.7 13.0 23.1	20 15.3 51.3 87.0 76.9	23 59.0
TOTAL	13 33.3	26 66.7	39 100.0

CHI SQUARE = 10.39 with DF= 1 p value = 0.001
YATES CHI SQ = 8.28 with DF= 1 p value = 0.004
FISHER EXACT TEST (one tail) p value = 0.002

2-Way Contingency Table

ANTILO / LGBIRD — FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT

ANTILO		LGBIRD 0	LGBIRD 1	TOTAL
0	FREQUENCY	13	3	16
	EXPECTED	10.7	5.3	
	TOT PCT	33.3	7.7	41.0
	ROW PCT	81.3	18.8	
	COL PCT	50.0	23.1	
1	FREQUENCY	13	10	23
	EXPECTED	15.3	7.7	
	TOT PCT	33.3	25.6	59.0
	ROW PCT	56.5	43.5	
	COL PCT	50.0	76.9	
TOTAL		26	13	39
		66.7	33.3	100.0

CHI SQUARE = 2.60 with DF= 1 p value = 0.108
YATES CHI SQ = 1.60 with DF= 1 p value = 0.206
FISHER EXACT TEST (one tail) p value = 0.102

2-Way Contingency Table

ANTILO / VLGEMAM — FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT

ANTILO		VLGEMAM 0	VLGEMAM 1	TOTAL
0	FREQUENCY	16	0	16
	EXPECTED	14.8	1.2	
	TOT PCT	41.0	0.0	41.0
	ROW PCT	100.0	0.0	
	COL PCT	44.4	0.0	
1	FREQUENCY	20	3	23
	EXPECTED	21.2	1.8	
	TOT PCT	51.3	7.7	59.0
	ROW PCT	87.0	13.0	
	COL PCT	55.6	100.0	
TOTAL		36	3	39
		92.3	7.7	100.0

CHI SQUARE = 2.26 with DF= 1 p value = 0.133
YATES CHI SQ = 0.80 with DF= 1 p value = 0.372
FISHER EXACT TEST (one tail) p value = 0.194

2-Way Contingency Table

ANTILO (rows) by SMMAM (columns); cell entries: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

ANTILO		0	1	TOTAL
0	FREQUENCY	15	1	16
	EXPECTED	14.8	1.2	
	TOT PCT	38.5	2.6	41.0
	ROW PCT	93.8	6.3	
	COL PCT	41.7	33.3	
1	FREQUENCY	21	2	23
	EXPECTED	21.2	1.8	
	TOT PCT	53.8	5.1	59.0
	ROW PCT	91.3	8.7	
	COL PCT	58.3	66.7	
TOTAL		36	3	39
		92.3	7.7	100.0

```
CHI SQUARE     =   0.08  with DF=  1        p value = 0.778
YATES CHI SQ   =   0.11  with DF=  1        p value = 0.742
FISHER EXACT TEST  (one tail)               p value = 0.637
```

2-Way Contingency Table

ANTILO (rows) by LAGBIRD (columns); cell entries: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

ANTILO		0	1	TOTAL
0	FREQUENCY	14	2	16
	EXPECTED	13.5	2.5	
	TOT PCT	35.9	5.1	41.0
	ROW PCT	87.5	12.5	
	COL PCT	42.4	33.3	
1	FREQUENCY	19	4	23
	EXPECTED	19.5	3.5	
	TOT PCT	48.7	10.3	59.0
	ROW PCT	82.6	17.4	
	COL PCT	57.6	66.7	
TOTAL		33	6	39
		84.6	15.4	100.0

```
CHI SQUARE     =   0.17  with DF=  1        p value = 0.677
YATES CHI SQ   =   0.00  with DF=  1        p value = 0.972
FISHER EXACT TEST  (one tail)               p value = 0.522
```

2-Way Contingency Table

ARTIO (rows) by LAGBIRD (columns); cell entries: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

ARTIO	LAGBIRD 0	LAGBIRD 1	TOTAL
0	9 8.5 23.1 90.0 27.3	1 1.5 2.6 10.0 16.7	10 25.6
1	24 24.5 61.5 82.8 72.7	5 4.5 12.8 17.2 83.3	29 74.4
TOTAL	33 84.6	6 15.4	39 100.0

```
CHI SQUARE     =  0.30  with DF=  1       p value = 0.584
YATES CHI SQ   =  0.00  with DF=  1       p value = 0.969
FISHER EXACT TEST  (one tail)             p value = 0.510
--------------
```

2-Way Contingency Table

ARTIO (rows) by LGBIRD (columns); cell entries: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

ARTIO	LGBIRD 0	LGBIRD 1	TOTAL
0	8 6.7 20.5 80.0 30.8	2 3.3 5.1 20.0 15.4	10 25.6
1	18 19.3 46.2 62.1 69.2	11 9.7 28.2 37.9 84.6	29 74.4
TOTAL	26 66.7	13 33.3	39 100.0

```
CHI SQUARE     =  1.08  with DF=  1       p value = 0.300
YATES CHI SQ   =  0.42  with DF=  1       p value = 0.517
FISHER EXACT TEST  (one tail)             p value = 0.264
```

2-Way Contingency Table

ARTIO (rows) by LEPUS (columns); cell entries: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

ARTIO		0	1	TOTAL
0	FREQUENCY	4	6	10
	EXPECTED	2.8	7.2	
	TOT PCT	10.3	15.4	25.6
	ROW PCT	40.0	60.0	
	COL PCT	36.4	21.4	
1	FREQUENCY	7	22	29
	EXPECTED	8.2	20.8	
	TOT PCT	17.9	56.4	74.4
	ROW PCT	24.1	75.9	
	COL PCT	63.6	78.6	
TOTAL		11	28	39
		28.2	71.8	100.0

```
CHI SQUARE     =   0.92  with DF=  1        p value = 0.337
YATES CHI SQ   =   0.31  with DF=  1        p value = 0.580
FISHER EXACT TEST  (one tail)               p value = 0.284
----------
```

2-Way Contingency Table

ARTIO (rows) by LGMAM (columns); cell entries: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

ARTIO		0	1	TOTAL
0	FREQUENCY	0	10	10
	EXPECTED	0.5	9.5	
	TOT PCT	0.0	25.6	25.6
	ROW PCT	0.0	100.0	
	COL PCT	0.0	27.0	
1	FREQUENCY	2	27	29
	EXPECTED	1.5	27.5	
	TOT PCT	5.1	69.2	74.4
	ROW PCT	6.9	93.1	
	COL PCT	100.0	73.0	
TOTAL		2	37	39
		5.1	94.9	100.0

```
CHI SQUARE     =   0.73  with DF=  1        p value = 0.394
YATES CHI SQ   =   0.00  with DF=  1        p value = 0.983
FISHER EXACT TEST  (one tail)               p value = 0.548
---------------
```

2-Way Contingency Table

ARTIO / MELEA (cells: FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT)

ARTIO	Statistic	MELEA 0	MELEA 1	TOTAL
0	FREQUENCY	6	4	10
	EXPECTED	6.4	3.6	
	TOT PCT	15.4	10.3	25.6
	ROW PCT	60.0	40.0	
	COL PCT	24.0	28.6	
1	FREQUENCY	19	10	29
	EXPECTED	18.6	10.4	
	TOT PCT	48.7	25.6	74.4
	ROW PCT	65.5	34.5	
	COL PCT	76.0	71.4	
TOTAL		25	14	39
		64.1	35.9	100.0

CHI SQUARE = 0.10 with DF= 1 p value = 0.754
YATES CHI SQ = 0.00 with DF= 1 p value = 0.945
FISHER EXACT TEST (one tail) p value = 0.520

2-Way Contingency Table

ARTIO / MDLGMAM (cells: FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT)

ARTIO	Statistic	MDLGMAM 0	MDLGMAM 1	TOTAL
0	FREQUENCY	6	4	10
	EXPECTED	5.1	4.9	
	TOT PCT	15.4	10.3	25.6
	ROW PCT	60.0	40.0	
	COL PCT	30.0	21.1	
1	FREQUENCY	14	15	29
	EXPECTED	14.9	14.1	
	TOT PCT	35.9	38.5	74.4
	ROW PCT	48.3	51.7	
	COL PCT	70.0	78.9	
TOTAL		20	19	39
		51.3	48.7	100.0

CHI SQUARE = 0.41 with DF= 1 p value = 0.523
YATES CHI SQ = 0.07 with DF= 1 p value = 0.785
FISHER EXACT TEST (one tail) p value = 0.394

2-Way Contingency Table

ARTIO by SMMAM (cells: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

ARTIO	SMMAM 0	SMMAM 1	TOTAL
0	9 9.2 23.1 90.0 25.0	1 0.8 2.6 10.0 33.3	10 25.6
1	27 26.8 69.2 93.1 75.0	2 2.2 5.1 6.9 66.7	29 74.4
TOTAL	36 92.3	3 7.7	39 100.0

CHI SQUARE = 0.10 with DF= 1 p value = 0.751
YATES CHI SQ = 0.14 with DF= 1 p value = 0.711
FISHER EXACT TEST (one tail) p value = 0.600

2-Way Contingency Table

ARTIO by SMMEDMAM (cells: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

ARTIO	SMMEDMAM 0	SMMEDMAM 1	TOTAL
0	5 3.3 12.8 50.0 38.5	5 6.7 12.8 50.0 19.2	10 25.6
1	8 9.7 20.5 27.6 61.5	21 19.3 53.8 72.4 80.8	29 74.4
TOTAL	13 33.3	26 66.7	39 100.0

CHI SQUARE = 1.68 with DF= 1 p value = 0.195
YATES CHI SQ = 0.82 with DF= 1 p value = 0.365
FISHER EXACT TEST (one tail) p value = 0.181

2-Way Contingency Table

ARTIO — SYLV

FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

ARTIO	SYLV 0	SYLV 1	TOTAL
0	1	9	10
	0.8	9.2	
	2.6	23.1	25.6
	10.0	90.0	
	33.3	25.0	
1	2	27	29
	2.2	26.8	
	5.1	69.2	74.4
	6.9	93.1	
	66.7	75.0	
TOTAL	3	36	39
	7.7	92.3	100.0

CHI SQUARE = 0.10 with DF= 1 p value = 0.751
YATES CHI SQ = 0.14 with DF= 1 p value = 0.711
FISHER EXACT TEST (one tail) p value = 0.600

2-Way Contingency Table

ARTIO — VLGEMAM

FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

ARTIO	VLGEMAM 0	VLGEMAM 1	TOTAL
0	8	2	10
	9.2	0.8	
	20.5	5.1	25.6
	80.0	20.0	
	22.2	66.7	
1	28	1	29
	26.8	2.2	
	71.8	2.6	74.4
	96.6	3.4	
	77.8	33.3	
TOTAL	36	3	39
	92.3	7.7	100.0

CHI SQUARE = 2.87 with DF= 1 p value = 0.091
YATES CHI SQ = 1.01 with DF= 1 p value = 0.315
FISHER EXACT TEST (one tail) p value = 0.156

2-Way Contingency Table

CER_BIS / ARTIO (FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT)

CER_BIS		0	1	TOTAL
0	FREQUENCY	9	24	33
	EXPECTED	8.5	24.5	
	TOT PCT	23.1	61.5	84.6
	ROW PCT	27.3	72.7	
	COL PCT	90.0	82.8	
1	FREQUENCY	1	5	6
	EXPECTED	1.5	4.5	
	TOT PCT	2.6	12.8	15.4
	ROW PCT	16.7	83.3	
	COL PCT	10.0	17.2	
TOTAL		10	29	39
		25.6	74.4	100.0

```
CHI SQUARE      =  0.30  with DF=  1        p value = 0.584
YATES CHI SQ    =  0.00  with DF=  1        p value = 0.969
FISHER EXACT TEST  (one tail)               p value = 0.510
```

2-Way Contingency Table

CER_BIS / LAGBIRD (FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT)

CER_BIS		0	1	TOTAL
0	FREQUENCY	29	4	33
	EXPECTED	27.9	5.1	
	TOT PCT	74.4	10.3	84.6
	ROW PCT	87.9	12.1	
	COL PCT	87.9	66.7	
1	FREQUENCY	4	2	6
	EXPECTED	5.1	0.9	
	TOT PCT	10.3	5.1	15.4
	ROW PCT	66.7	33.3	
	COL PCT	12.1	33.3	
TOTAL		33	6	39
		84.6	15.4	100.0

```
CHI SQUARE      =  1.75  with DF=  1        p value = 0.186
YATES CHI SQ    =  0.50  with DF=  1        p value = 0.478
FISHER EXACT TEST  (one tail)               p value = 0.224
```

2-Way Contingency Table

CER_BIS by LEPUS (cells: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

CER_BIS	LEPUS 0	LEPUS 1	TOTAL
0	11 9.3 28.2 33.3 100.0	22 23.7 56.4 66.7 78.6	33 84.6
1	0 1.7 0.0 0.0 0.0	6 4.3 15.4 100.0 21.4	6 15.4
TOTAL	11 28.2	28 71.8	39 100.0

```
CHI SQUARE      =   2.79  with DF=  1        p value = 0.096
YATES CHI SQ    =   1.38  with DF=  1        p value = 0.240
FISHER EXACT TEST  (one tail)                p value = 0.115
```

2-Way Contingency Table

CER_BIS by LGBIRD (cells: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

CER_BIS	LGBIRD 0	LGBIRD 1	TOTAL
0	22 22.0 56.4 66.7 84.6	11 11.0 28.2 33.3 84.6	33 84.6
1	4 4.0 10.3 66.7 15.4	2 2.0 5.1 33.3 15.4	6 15.4
TOTAL	26 66.7	13 33.3	39 100.0

```
CHI SQUARE      =   0.00  with DF=  1        p value = 1.000
YATES CHI SQ    =   0.22  with DF=  1        p value = 0.638
FISHER EXACT TEST  (one tail)                p value = 0.690
```

2-Way Contingency Table

CER_BIS: LGMAM

FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

CER_BIS	0	1	TOTAL
0	2 1.7 5.1 6.1 100.0	31 31.3 79.5 93.9 83.8	33 84.6
1	0 0.3 0.0 0.0 0.0	6 5.7 15.4 100.0 16.2	6 15.4
TOTAL	2 5.1	37 94.9	39 100.0

CHI SQUARE = 0.38 with DF= 1 p value = 0.536
YATES CHI SQ = 0.15 with DF= 1 p value = 0.699
FISHER EXACT TEST (one tail) p value = 0.713

2-Way Contingency Table

CER_BIS: MDLGMAM

FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

CER_BIS	0	1	TOTAL
0	18 16.9 46.2 54.5 90.0	15 16.1 38.5 45.5 78.9	33 84.6
1	2 3.1 5.1 33.3 10.0	4 2.9 10.3 66.7 21.1	6 15.4
TOTAL	20 51.3	19 48.7	39 100.0

CHI SQUARE = 0.91 with DF= 1 p value = 0.339
YATES CHI SQ = 0.26 with DF= 1 p value = 0.609
FISHER EXACT TEST (one tail) p value = 0.305

2-Way Contingency Table

CER_BIS: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT; MELEA

CER_BIS		MELEA 0	MELEA 1	TOTAL
0	FREQUENCY	21	12	33
	EXPECTED	21.2	11.8	
	TOT PCT	53.8	30.8	84.6
	ROW PCT	63.6	36.4	
	COL PCT	84.0	85.7	
1	FREQUENCY	4	2	6
	EXPECTED	3.8	2.2	
	TOT PCT	10.3	5.1	15.4
	ROW PCT	66.7	33.3	
	COL PCT	16.0	14.3	
TOTAL		25	14	39
		64.1	35.9	100.0

CHI SQUARE = 0.02 with DF= 1 p value = 0.887
YATES CHI SQ = 0.10 with DF= 1 p value = 0.749
FISHER EXACT TEST (one tail) p value = 0.635

2-Way Contingency Table

CER_BIS: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT; SMMAM

CER_BIS		SMMAM 0	SMMAM 1	TOTAL
0	FREQUENCY	31	2	33
	EXPECTED	30.5	2.5	
	TOT PCT	79.5	5.1	84.6
	ROW PCT	93.9	6.1	
	COL PCT	86.1	66.7	
1	FREQUENCY	5	1	6
	EXPECTED	5.5	0.5	
	TOT PCT	12.8	2.6	15.4
	ROW PCT	83.3	16.7	
	COL PCT	13.9	33.3	
TOTAL		36	3	39
		92.3	7.7	100.0

CHI SQUARE = 0.80 with DF= 1 p value = 0.370
YATES CHI SQ = 0.00 with DF= 1 p value = 0.949
FISHER EXACT TEST (one tail) p value = 0.403

2-Way Contingency Table

CER_BIS / SMMEDMAM (FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT)

CER_BIS		0	1	TOTAL
0	FREQUENCY	12	21	33
	EXPECTED	11.0	22.0	
	TOT PCT	30.8	53.8	84.6
	ROW PCT	36.4	63.6	
	COL PCT	92.3	80.8	
1	FREQUENCY	1	5	6
	EXPECTED	2.0	4.0	
	TOT PCT	2.6	12.8	15.4
	ROW PCT	16.7	83.3	
	COL PCT	7.7	19.2	
TOTAL		13	26	39
		33.3	66.7	100.0

```
CHI SQUARE     =   0.89  with DF=  1        p value = 0.347
YATES CHI SQ   =   0.22  with DF=  1        p value = 0.638
FISHER EXACT TEST  (one tail)               p value = 0.333
```

2-Way Contingency Table

CER_BIS / SYLV (FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT)

CER_BIS		0	1	TOTAL
0	FREQUENCY	3	30	33
	EXPECTED	2.5	30.5	
	TOT PCT	7.7	76.9	84.6
	ROW PCT	9.1	90.9	
	COL PCT	100.0	83.3	
1	FREQUENCY	0	6	6
	EXPECTED	0.5	5.5	
	TOT PCT	0.0	15.4	15.4
	ROW PCT	0.0	100.0	
	COL PCT	0.0	16.7	
TOTAL		3	36	39
		7.7	92.3	100.0

```
CHI SQUARE     =   0.59  with DF=  1        p value = 0.442
YATES CHI SQ   =   0.00  with DF=  1        p value = 0.949
FISHER EXACT TEST  (one tail)               p value = 0.597
```

2-Way Contingency Table

CER_BIS / VLGEMAM (FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT)

CER_BIS \ VLGEMAM		0	1	TOTAL
0	FREQUENCY	31	2	33
	EXPECTED	30.5	2.5	
	TOT PCT	79.5	5.1	84.6
	ROW PCT	93.9	6.1	
	COL PCT	86.1	66.7	
1	FREQUENCY	5	1	6
	EXPECTED	5.5	0.5	
	TOT PCT	12.8	2.6	15.4
	ROW PCT	83.3	16.7	
	COL PCT	13.9	33.3	
TOTAL		36	3	39
		92.3	7.7	100.0

```
CHI SQUARE     =   0.80  with DF=  1       p value = 0.370
YATES CHI SQ   =   0.00  with DF=  1       p value = 0.949
FISHER EXACT TEST  (one tail)              p value = 0.403
```

2-Way Contingency Table

LGBIRD / LAGBIRD (FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT)

LGBIRD \ LAGBIRD		0	1	TOTAL
0	FREQUENCY	23	3	26
	EXPECTED	22.0	4.0	
	TOT PCT	59.0	7.7	66.7
	ROW PCT	88.5	11.5	
	COL PCT	69.7	50.0	
1	FREQUENCY	10	3	13
	EXPECTED	11.0	2.0	
	TOT PCT	25.6	7.7	33.3
	ROW PCT	76.9	23.1	
	COL PCT	30.3	50.0	
TOTAL		33	6	39
		84.6	15.4	100.0

```
CHI SQUARE     =   0.89  with DF=  1       p value = 0.347
YATES CHI SQ   =   0.22  with DF=  1       p value = 0.638
FISHER EXACT TEST  (one tail)              p value = 0.310
```

2-Way Contingency Table

LGBIRD (rows) by SMMAM (columns); cell contents: FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT

LGBIRD	SMMAM 0	SMMAM 1	TOTAL
0	24 24.0 61.5 92.3 66.7	2 2.0 5.1 7.7 66.7	26 66.7
1	12 12.0 30.8 92.3 33.3	1 1.0 2.6 7.7 33.3	13 33.3
TOTAL	36 92.3	3 7.7	39 100.0

```
CHI SQUARE     =   0.00  with DF=  1        p value = 1.000
YATES CHI SQ   =   0.41  with DF=  1        p value = 0.524
FISHER EXACT TEST   (one tail)              p value = 0.747
```

2-Way Contingency Table

LGBIRD (rows) by VLGEMAM (columns); cell contents: FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT

LGBIRD	VLGEMAM 0	VLGEMAM 1	TOTAL
0	25 24.0 64.1 96.2 69.4	1 2.0 2.6 3.8 33.3	26 66.7
1	11 12.0 28.2 84.6 30.6	2 1.0 5.1 15.4 66.7	13 33.3
TOTAL	36 92.3	3 7.7	39 100.0

```
CHI SQUARE     =   1.63  with DF=  1        p value = 0.203
YATES CHI SQ   =   0.41  with DF=  1        p value = 0.524
FISHER EXACT TEST   (one tail)              p value = 0.253
```

2-Way Contingency Table

LEPUS / SMMAM (FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT)

LEPUS \ SMMAM	0	1	TOTAL
0	10 10.2 25.6 90.9 27.8	1 0.8 2.6 9.1 33.3	11 28.2
1	26 25.8 66.7 92.9 72.2	2 2.2 5.1 7.1 66.7	28 71.8
TOTAL	36 92.3	3 7.7	39 100.0

CHI SQUARE = 0.04 with DF= 1 p value = 0.837
YATES CHI SQ = 0.21 with DF= 1 p value = 0.644
FISHER EXACT TEST (one tail) p value = 0.642

2-Way Contingency Table

LEPUS / SYLV (FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT)

LEPUS \ SYLV	0	1	TOTAL
0	2 0.8 5.1 18.2 66.7	9 10.2 23.1 81.8 25.0	11 28.2
1	1 2.2 2.6 3.6 33.3	27 25.8 69.2 96.4 75.0	28 71.8
TOTAL	3 7.7	36 92.3	39 100.0

CHI SQUARE = 2.37 with DF= 1 p value = 0.124
YATES CHI SQ = 0.76 with DF= 1 p value = 0.383
FISHER EXACT TEST (one tail) p value = 0.187

2-Way Contingency Table

LEPUS / LGBIRD (cells: FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT)

LEPUS	0	1	TOTAL
0	8 7.3 20.5 72.7 30.8	3 3.7 7.7 27.3 23.1	11 28.2
1	18 18.7 46.2 64.3 69.2	10 9.3 25.6 35.7 76.9	28 71.8
TOTAL	26 66.7	13 33.3	39 100.0

CHI SQUARE = 0.25 with DF= 1 p value = 0.615
YATES CHI SQ = 0.02 with DF= 1 p value = 0.900
FISHER EXACT TEST (one tail) p value = 0.458

2-Way Contingency Table

LEPUS / SMMAM (cells: FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT)

LEPUS	0	1	TOTAL
0	10 10.2 25.6 90.9 27.8	1 0.8 2.6 9.1 33.3	11 28.2
1	26 25.8 66.7 92.9 72.2	2 2.2 5.1 7.1 66.7	28 71.8
TOTAL	36 92.3	3 7.7	39 100.0

CHI SQUARE = 0.04 with DF= 1 p value = 0.837
YATES CHI SQ = 0.21 with DF= 1 p value = 0.644
FISHER EXACT TEST (one tail) p value = 0.642

2-Way Contingency Table

LEPUS / SMMEDMAM (FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT)

LEPUS	0	1	TOTAL
0	6 3.7 15.4 54.5 46.2	5 7.3 12.8 45.5 19.2	11 28.2
1	7 9.3 17.9 25.0 53.8	21 18.7 53.8 75.0 80.8	28 71.8
TOTAL	13 33.3	26 66.7	39 100.0

```
CHI SQUARE     =   3.10  with DF=  1        p value = 0.079
YATES CHI SQ   =   1.92  with DF=  1        p value = 0.167
FISHER EXACT TEST  (one tail)               p value = 0.085
```

2-Way Contingency Table

LEPUS / VLGEMAM (FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT)

LEPUS	0	1	TOTAL
0	10 10.2 25.6 90.9 27.8	1 0.8 2.6 9.1 33.3	11 28.2
1	26 25.8 66.7 92.9 72.2	2 2.2 5.1 7.1 66.7	28 71.8
TOTAL	36 92.3	3 7.7	39 100.0

```
CHI SQUARE     =   0.04  with DF=  1        p value = 0.837
YATES CHI SQ   =   0.21  with DF=  1        p value = 0.644
FISHER EXACT TEST  (one tail)               p value = 0.642
```

2-Way Contingency Table

LGMAM (rows) by MDLGMAM (columns). Cell values: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

LGMAM	MDLGMAM 0	MDLGMAM 1	TOTAL
0	1 1.0 2.6 50.0 5.0	1 1.0 2.6 50.0 5.3	2 5.1
1	19 19.0 48.7 51.4 95.0	18 18.0 46.2 48.6 94.7	37 94.9
TOTAL	20 51.3	19 48.7	39 100.0

```
CHI SQUARE     =   0.00  with DF=  1       p value = 0.970
YATES CHI SQ   =   0.47  with DF=  1       p value = 0.491
FISHER EXACT TEST   (one tail)             p value = 0.744
```

2-Way Contingency Table

LGMAM (rows) by MELEA (columns). Cell values: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

LGMAM	MELEA 0	MELEA 1	TOTAL
0	1 1.3 2.6 50.0 4.0	1 0.7 2.6 50.0 7.1	2 5.1
1	24 23.7 61.5 64.9 96.0	13 13.3 33.3 35.1 92.9	37 94.9
TOTAL	25 64.1	14 35.9	39 100.0

```
CHI SQUARE     =   0.18  with DF=  1       p value = 0.670
YATES CHI SQ   =   0.11  with DF=  1       p value = 0.742
FISHER EXACT TEST   (one tail)             p value = 0.595
```

2-Way Contingency Table

LGMAM (rows) by LEPUS (columns). Cell contents: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

LGMAM		0	1	TOTAL
0	FREQUENCY	1	1	2
	EXPECTED	0.6	1.4	
	TOT PCT	2.6	2.6	5.1
	ROW PCT	50.0	50.0	
	COL PCT	9.1	3.6	
1	FREQUENCY	10	27	37
	EXPECTED	10.4	26.6	
	TOT PCT	25.6	69.2	94.9
	ROW PCT	27.0	73.0	
	COL PCT	90.9	96.4	
TOTAL		11	28	39
		28.2	71.8	100.0

```
CHI SQUARE     =   0.49  with DF=  1        p value = 0.482
YATES CHI SQ   =   0.01  with DF=  1        p value = 0.918
FISHER EXACT TEST  (one tail)               p value = 0.490
```

2-Way Contingency Table

LGMAM (rows) by SYLV (columns). Cell contents: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

LGMAM		0	1	TOTAL
0	FREQUENCY	0	2	2
	EXPECTED	0.2	1.8	
	TOT PCT	0.0	5.1	5.1
	ROW PCT	0.0	100.0	
	COL PCT	0.0	5.6	
1	FREQUENCY	3	34	37
	EXPECTED	2.8	34.2	
	TOT PCT	7.7	87.2	94.9
	ROW PCT	8.1	91.9	
	COL PCT	100.0	94.4	
TOTAL		3	36	39
		7.7	92.3	100.0

```
CHI SQUARE     =   0.18  with DF=  1        p value = 0.675
YATES CHI SQ   =   0.89  with DF=  1        p value = 0.346
FISHER EXACT TEST  (one tail)               p value = 0.850
```

2-Way Contingency Table

LGMAM × SMMEDMAM (cells: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

LGMAM	SMMEDMAM 0	SMMEDMAM 1	TOTAL
0	2 0.7 5.1 100.0 15.4	0 1.3 0.0 0.0 0.0	2 5.1
1	11 12.3 28.2 29.7 84.6	26 24.7 66.7 70.3 100.0	37 94.9
TOTAL	13 33.3	26 66.7	39 100.0

CHI SQUARE = 4.22 with DF= 1 p value = 0.041
YATES CHI SQ = 1.65 with DF= 1 p value = 0.200
FISHER EXACT TEST (one tail) p value = 0.105

2-Way Contingency Table

LGMAM × LGBIRD (cells: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

LGMAM	LGBIRD 0	LGBIRD 1	TOTAL
0	2 1.3 5.1 100.0 7.7	0 0.7 0.0 0.0 0.0	2 5.1
1	24 24.7 61.5 64.9 92.3	13 12.3 33.3 35.1 100.0	37 94.9
TOTAL	26 66.7	13 33.3	39 100.0

CHI SQUARE = 1.05 with DF= 1 p value = 0.305
YATES CHI SQ = 0.07 with DF= 1 p value = 0.798
FISHER EXACT TEST (one tail) p value = 0.439

2-Way Contingency Table

LGMAM (rows) by VLGEMAM (columns); cell entries: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

LGMAM	0	1	TOTAL
0	2 1.8 5.1 100.0 5.6	0 0.2 0.0 0.0 0.0	2 5.1
1	34 34.2 87.2 91.9 94.4	3 2.8 7.7 8.1 100.0	37 94.9
TOTAL	36 92.3	3 7.7	39 100.0

```
CHI SQUARE     =  0.18  with DF=  1        p value = 0.675
YATES CHI SQ   =  0.89  with DF=  1        p value = 0.346
FISHER EXACT TEST  (one tail)              p value = 0.850
```

2-Way Contingency Table

LGMAM (rows) by SMMAM (columns); cell entries: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

LGMAM	0	1	TOTAL
0	2 1.8 5.1 100.0 5.6	0 0.2 0.0 0.0 0.0	2 5.1
1	34 34.2 87.2 91.9 94.4	3 2.8 7.7 8.1 100.0	37 94.9
TOTAL	36 92.3	3 7.7	39 100.0

```
CHI SQUARE     =  0.18  with DF=  1        p value = 0.675
YATES CHI SQ   =  0.89  with DF=  1        p value = 0.346
FISHER EXACT TEST  (one tail)              p value = 0.850
```

2-Way Contingency Table

LGMAM by LAGBIRD (cells: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

LGMAM	LAGBIRD 0	LAGBIRD 1	TOTAL
0	2 1.7 5.1 100.0 6.1	0 0.3 0.0 0.0 0.0	2 5.1
1	31 31.3 79.5 83.8 93.9	6 5.7 15.4 16.2 100.0	37 94.9
TOTAL	33 84.6	6 15.4	39 100.0

```
CHI SQUARE        =   0.38  with DF=  1      p value = 0.536
YATES CHI SQ      =   0.15  with DF=  1      p value = 0.699
FISHER EXACT TEST   (one tail)               p value = 0.713
```

2-Way Contingency Table

ODOC by OVIS (cells: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

ODOC	OVIS 0	OVIS 1	TOTAL
0	18 17.1 46.2 94.7 51.4	1 1.9 2.6 5.3 25.0	19 48.7
1	17 17.9 43.6 85.0 48.6	3 2.1 7.7 15.0 75.0	20 51.3
TOTAL	35 89.7	4 10.3	39 100.0

```
CHI SQUARE        =   1.00  with DF=  1      p value = 0.317
YATES CHI SQ      =   0.22  with DF=  1      p value = 0.636
FISHER EXACT TEST   (one tail)               p value = 0.322
```

2-Way Contingency Table

ODOC × ARTIO (cells: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

ODOC	0	1	TOTAL
0	6 4.9 15.4 31.6 60.0	13 14.1 33.3 68.4 44.8	19 48.7
1	4 5.1 10.3 20.0 40.0	16 14.9 41.0 80.0 55.2	20 51.3
TOTAL	10 25.6	29 74.4	39 100.0

```
CHI SQUARE       =   0.69  with DF=  1        p value = 0.408
YATES CHI SQ     =   0.21  with DF=  1        p value = 0.645
FISHER EXACT TEST   (one tail)                p value = 0.323
```

2-Way Contingency Table

ODOC × LGMAM (cells: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

ODOC	0	1	TOTAL
0	2 1.0 5.1 10.5 100.0	17 18.0 43.6 89.5 45.9	19 48.7
1	0 1.0 0.0 0.0 0.0	20 19.0 51.3 100.0 54.1	20 51.3
TOTAL	2 5.1	37 94.9	39 100.0

```
CHI SQUARE       =   2.22  with DF=  1        p value = 0.137
YATES CHI SQ     =   0.58  with DF=  1        p value = 0.446
FISHER EXACT TEST   (one tail)                p value = 0.231
```

2-Way Contingency Table

ODOC: MDLGMAM (cells: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

ODOC		0	1	TOTAL
0	FREQUENCY	12	7	19
	EXPECTED	9.7	9.3	
	TOT PCT	30.8	17.9	48.7
	ROW PCT	63.2	36.8	
	COL PCT	60.0	36.8	
1	FREQUENCY	8	12	20
	EXPECTED	10.3	9.7	
	TOT PCT	20.5	30.8	51.3
	ROW PCT	40.0	60.0	
	COL PCT	40.0	63.2	
TOTAL		20	19	39
		51.3	48.7	100.0

CHI SQUARE = 2.09 with DF= 1 p value = 0.149
YATES CHI SQ = 1.27 with DF= 1 p value = 0.261
FISHER EXACT TEST (one tail) p value = 0.130

2-Way Contingency Table

ODOC: MELEA (cells: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

ODOC		0	1	TOTAL
0	FREQUENCY	14	5	19
	EXPECTED	12.2	6.8	
	TOT PCT	35.9	12.8	48.7
	ROW PCT	73.7	26.3	
	COL PCT	56.0	35.7	
1	FREQUENCY	11	9	20
	EXPECTED	12.8	7.2	
	TOT PCT	28.2	23.1	51.3
	ROW PCT	55.0	45.0	
	COL PCT	44.0	64.3	
TOTAL		25	14	39
		64.1	35.9	100.0

CHI SQUARE = 1.48 with DF= 1 p value = 0.225
YATES CHI SQ = 0.78 with DF= 1 p value = 0.378
FISHER EXACT TEST (one tail) p value = 0.189

2-Way Contingency Table

ODOC by LEPUS (cells: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

ODOC	0	1	TOTAL
0	11 5.4 28.2 57.9 100.0	8 13.6 20.5 42.1 28.6	19 48.7
1	0 5.6 0.0 0.0 0.0	20 14.4 51.3 100.0 71.4	20 51.3
TOTAL	11 28.2	28 71.8	39 100.0

CHI SQUARE = 16.13 with DF= 1 p value = 0.000
YATES CHI SQ = 13.40 with DF= 1 p value = 0.000
FISHER EXACT TEST (one tail) p value = 0.000

2-Way Contingency Table

ODOC by SYLV (cells: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

ODOC	0	1	TOTAL
0	3 1.5 7.7 15.8 100.0	16 17.5 41.0 84.2 44.4	19 48.7
1	0 1.5 0.0 0.0 0.0	20 18.5 51.3 100.0 55.6	20 51.3
TOTAL	3 7.7	36 92.3	39 100.0

CHI SQUARE = 3.42 with DF= 1 p value = 0.065
YATES CHI SQ = 1.56 with DF= 1 p value = 0.212
FISHER EXACT TEST (one tail) p value = 0.106

2-Way Contingency Table

ODOC by SMMEDMAM (cells: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

ODOC	SMMEDMAM 0	SMMEDMAM 1	TOTAL
0	9 6.3 23.1 47.4 69.2	10 12.7 25.6 52.6 38.5	19 48.7
1	4 6.7 10.3 20.0 30.8	16 13.3 41.0 80.0 61.5	20 51.3
TOTAL	13 33.3	26 66.7	39 100.0

```
CHI SQUARE     =   3.28  with DF=  1       p value = 0.071
YATES CHI SQ   =   2.17  with DF=  1       p value = 0.142
FISHER EXACT TEST  (one tail)              p value = 0.070
```

2-Way Contingency Table

ODOC by LGBIRD (cells: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

ODOC	LGBIRD 0	LGBIRD 1	TOTAL
0	15 12.7 38.5 78.9 57.7	4 6.3 10.3 21.1 30.8	19 48.7
1	11 13.3 28.2 55.0 42.3	9 6.7 23.1 45.0 69.2	20 51.3
TOTAL	26 66.7	13 33.3	39 100.0

```
CHI SQUARE     =   2.51  with DF=  1       p value = 0.113
YATES CHI SQ   =   1.55  with DF=  1       p value = 0.213
FISHER EXACT TEST  (one tail)              p value = 0.106
```

2-Way Contingency Table

ODOC (rows) by VLGEMAM (columns). Cell entries: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

ODOC	VLGEMAM 0	VLGEMAM 1	TOTAL
0	18 17.5 46.2 94.7 50.0	1 1.5 2.6 5.3 33.3	19 48.7
1	18 18.5 46.2 90.0 50.0	2 1.5 5.1 10.0 66.7	20 51.3
TOTAL	36 92.3	3 7.7	39 100.0

CHI SQUARE = 0.31 with DF= 1 p value = 0.579
YATES CHI SQ = 0.00 with DF= 1 p value = 0.963
FISHER EXACT TEST (one tail) p value = 0.520

2-Way Contingency Table

ODOC (rows) by SMMAM (columns). Cell entries: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

ODOC	SMMAM 0	SMMAM 1	TOTAL
0	18 17.5 46.2 94.7 50.0	1 1.5 2.6 5.3 33.3	19 48.7
1	18 18.5 46.2 90.0 50.0	2 1.5 5.1 10.0 66.7	20 51.3
TOTAL	36 92.3	3 7.7	39 100.0

CHI SQUARE = 0.31 with DF= 1 p value = 0.579
YATES CHI SQ = 0.00 with DF= 1 p value = 0.963
FISHER EXACT TEST (one tail) p value = 0.520

2-Way Contingency Table

ODOC × LAGBIRD (cell entries: FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT)

ODOC	LAGBIRD 0	LAGBIRD 1	TOTAL
0	18 16.1 46.2 94.7 54.5	1 2.9 2.6 5.3 16.7	19 48.7
1	15 16.9 38.5 75.0 45.5	5 3.1 12.8 25.0 83.3	20 51.3
TOTAL	33 84.6	6 15.4	39 100.0

CHI SQUARE = 2.92 with DF= 1 p value = 0.088
YATES CHI SQ = 1.60 with DF= 1 p value = 0.207
FISHER EXACT TEST (one tail) p value = 0.102

2-Way Contingency Table

OVIS × CER_BIS (cell entries: FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT)

OVIS	CER_BIS 0	CER_BIS 1	TOTAL
0	31 29.6 79.5 88.6 93.9	4 5.4 10.3 11.4 66.7	35 89.7
1	2 3.4 5.1 50.0 6.1	2 0.6 5.1 50.0 33.3	4 10.3
TOTAL	33 84.6	6 15.4	39 100.0

CHI SQUARE = 4.10 with DF= 1 p value = 0.043
YATES CHI SQ = 1.67 with DF= 1 p value = 0.196
FISHER EXACT TEST (one tail) p value = 0.104

2-Way Contingency Table

OVIS ARTIO

FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT	0	1	TOTAL
0	8	27	35
	9.0	26.0	
	20.5	69.2	89.7
	22.9	77.1	
	80.0	93.1	
1	2	2	4
	1.0	3.0	
	5.1	5.1	10.3
	50.0	50.0	
	20.0	6.9	
TOTAL	10	29	39
	25.6	74.4	100.0

CHI SQUARE = 1.39 with DF= 1 p value = 0.239
YATES CHI SQ = 0.33 with DF= 1 p value = 0.567
FISHER EXACT TEST (one tail) p value = 0.267

2-Way Contingency Table

OVIS LGMAM

FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT	0	1	TOTAL
0	2	33	35
	1.8	33.2	
	5.1	84.6	89.7
	5.7	94.3	
	100.0	89.2	
1	0	4	4
	0.2	3.8	
	0.0	10.3	10.3
	0.0	100.0	
	0.0	10.8	
TOTAL	2	37	39
	5.1	94.9	100.0

CHI SQUARE = 0.24 with DF= 1 p value = 0.624
YATES CHI SQ = 0.50 with DF= 1 p value = 0.481
FISHER EXACT TEST (one tail) p value = 0.803

2-Way Contingency Table

OVIS by MDLGMAM (FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

OVIS		MDLGMAM 0	MDLGMAM 1	TOTAL
0	FREQUENCY	19	16	35
	EXPECTED	17.9	17.1	
	TOT PCT	48.7	41.0	89.7
	ROW PCT	54.3	45.7	
	COL PCT	95.0	84.2	
1	FREQUENCY	1	3	4
	EXPECTED	2.1	1.9	
	TOT PCT	2.6	7.7	10.3
	ROW PCT	25.0	75.0	
	COL PCT	5.0	15.8	
TOTAL		20	19	39
		51.3	48.7	100.0

CHI SQUARE = 1.23 with DF= 1 p value = 0.267
YATES CHI SQ = 0.34 with DF= 1 p value = 0.561
FISHER EXACT TEST (one tail) p value = 0.283

2-Way Contingency Table

OVIS by MELEA (FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

OVIS		MELEA 0	MELEA 1	TOTAL
0	FREQUENCY	24	11	35
	EXPECTED	22.4	12.6	
	TOT PCT	61.5	28.2	89.7
	ROW PCT	68.6	31.4	
	COL PCT	96.0	78.6	
1	FREQUENCY	1	3	4
	EXPECTED	2.6	1.4	
	TOT PCT	2.6	7.7	10.3
	ROW PCT	25.0	75.0	
	COL PCT	4.0	21.4	
TOTAL		25	14	39
		64.1	35.9	100.0

CHI SQUARE = 2.96 with DF= 1 p value = 0.086
YATES CHI SQ = 1.37 with DF= 1 p value = 0.242
FISHER EXACT TEST (one tail) p value = 0.123

2-Way Contingency Table

OVIS (rows) by LEPUS (columns). Cell entries: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

OVIS	LEPUS 0	LEPUS 1	TOTAL
0	10 9.9 25.6 28.6 90.9	25 25.1 64.1 71.4 89.3	35 89.7
1	1 1.1 2.6 25.0 9.1	3 2.9 7.7 75.0 10.7	4 10.3
TOTAL	11 28.2	28 71.8	39 100.0

```
CHI SQUARE     =   0.02  with DF=  1       p value = 0.881
YATES CHI SQ   =   0.19  with DF=  1       p value = 0.663
FISHER EXACT TEST  (one tail)              p value = 0.687
```

2-Way Contingency Table

OVIS (rows) by SYLV (columns). Cell entries: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

OVIS	SYLV 0	SYLV 1	TOTAL
0	3 2.7 7.7 8.6 100.0	32 32.3 82.1 91.4 88.9	35 89.7
1	0 0.3 0.0 0.0 0.0	4 3.7 10.3 100.0 11.1	4 10.3
TOTAL	3 7.7	36 92.3	39 100.0

```
CHI SQUARE     =   0.37  with DF=  1       p value = 0.543
YATES CHI SQ   =   0.15  with DF=  1       p value = 0.703
FISHER EXACT TEST  (one tail)              p value = 0.716
```

2-Way Contingency Table

OVIS / FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT	SMMEDMAM 0	1	TOTAL
0	12 11.7 30.8 34.3 92.3	23 23.3 59.0 65.7 88.5	35 89.7
1	1 1.3 2.6 25.0 7.7	3 2.7 7.7 75.0 11.5	4 10.3
TOTAL	13 33.3	26 66.7	39 100.0

```
CHI SQUARE     =   0.14  with DF=  1        p value = 0.709
YATES CHI SQ   =   0.03  with DF=  1        p value = 0.852
FISHER EXACT TEST   (one tail)              p value = 0.593
```

2-Way Contingency Table

OVIS / FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT	LGBIRD 0	1	TOTAL
0	24 23.3 61.5 68.6 92.3	11 11.7 28.2 31.4 84.6	35 89.7
1	2 2.7 5.1 50.0 7.7	2 1.3 5.1 50.0 15.4	4 10.3
TOTAL	26 66.7	13 33.3	39 100.0

```
CHI SQUARE     =   0.56  with DF=  1        p value = 0.456
YATES CHI SQ   =   0.03  with DF=  1        p value = 0.852
FISHER EXACT TEST   (one tail)              p value = 0.407
```

2-Way Contingency Table

OVIS / VLGEMAM (cells: FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT)

OVIS	0	1	TOTAL
0	33 32.3 84.6 94.3 91.7	2 2.7 5.1 5.7 66.7	35 89.7
1	3 3.7 7.7 75.0 8.3	1 0.3 2.6 25.0 33.3	4 10.3
TOTAL	36 92.3	3 7.7	39 100.0

```
CHI SQUARE     =   1.88  with DF=  1        p value = 0.171
YATES CHI SQ   =   0.15  with DF=  1        p value = 0.703
FISHER EXACT TEST  (one tail)               p value = 0.284
```

2-Way Contingency Table

OVIS / SMMAM (cells: FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT)

OVIS	0	1	TOTAL
0	32 32.3 82.1 91.4 88.9	3 2.7 7.7 8.6 100.0	35 89.7
1	4 3.7 10.3 100.0 11.1	0 0.3 0.0 0.0 0.0	4 10.3
TOTAL	36 92.3	3 7.7	39 100.0

```
CHI SQUARE     =   0.37  with DF=  1        p value = 0.543
YATES CHI SQ   =   0.15  with DF=  1        p value = 0.703
FISHER EXACT TEST  (one tail)               p value = 0.716
```

2-Way Contingency Table

OVIS (rows) by LAGBIRD (columns). Cell contents: FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT

OVIS		LAGBIRD 0	LAGBIRD 1	TOTAL
0	FREQUENCY	30	5	35
	EXPECTED	29.6	5.4	
	TOT PCT	76.9	12.8	89.7
	ROW PCT	85.7	14.3	
	COL PCT	90.9	83.3	
1	FREQUENCY	3	1	4
	EXPECTED	3.4	0.6	
	TOT PCT	7.7	2.6	10.3
	ROW PCT	75.0	25.0	
	COL PCT	9.1	16.7	
TOTAL		33	6	39
		84.6	15.4	100.0

CHI SQUARE = 0.32 with DF= 1 p value = 0.574
YATES CHI SQ = 0.03 with DF= 1 p value = 0.866
FISHER EXACT TEST (one tail) p value = 0.502

2-Way Contingency Table

MDLGMAM (rows) by MELEA (columns). Cell contents: FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT

MDLGMAM		MELEA 0	MELEA 1	TOTAL
0	FREQUENCY	11	9	20
	EXPECTED	12.8	7.2	
	TOT PCT	28.2	23.1	51.3
	ROW PCT	55.0	45.0	
	COL PCT	44.0	64.3	
1	FREQUENCY	14	5	19
	EXPECTED	12.2	6.8	
	TOT PCT	35.9	12.8	48.7
	ROW PCT	73.7	26.3	
	COL PCT	56.0	35.7	
TOTAL		25	14	39
		64.1	35.9	100.0

CHI SQUARE = 1.48 with DF= 1 p value = 0.225
YATES CHI SQ = 0.78 with DF= 1 p value = 0.378
FISHER EXACT TEST (one tail) p value = 0.189

2-Way Contingency Table

MDLGMAM by LEPUS (FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

MDLGMAM	LEPUS 0	LEPUS 1	TOTAL
0	6 5.6 15.4 30.0 54.5	14 14.4 35.9 70.0 50.0	20 51.3
1	5 5.4 12.8 26.3 45.5	14 13.6 35.9 73.7 50.0	19 48.7
TOTAL	11 28.2	28 71.8	39 100.0

CHI SQUARE = 0.07 with DF= 1 p value = 0.798
YATES CHI SQ = 0.01 with DF= 1 p value = 0.920
FISHER EXACT TEST (one tail) p value = 0.540

2-Way Contingency Table

MDLGMAM by SYLV (FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

MDLGMAM	SYLV 0	SYLV 1	TOTAL
0	1 1.5 2.6 5.0 33.3	19 18.5 48.7 95.0 52.8	20 51.3
1	2 1.5 5.1 10.5 66.7	17 17.5 43.6 89.5 47.2	19 48.7
TOTAL	3 7.7	36 92.3	39 100.0

CHI SQUARE = 0.42 with DF= 1 p value = 0.518
YATES CHI SQ = 0.00 with DF= 1 p value = 0.963
FISHER EXACT TEST (one tail) p value = 0.480

2-Way Contingency Table

MDLGMAM by SMMEDMAM

FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT	0	1	TOTAL
0	7 6.7 17.9 35.0 53.8	13 13.3 33.3 65.0 50.0	20 51.3
1	6 6.3 15.4 31.6 46.2	13 12.7 33.3 68.4 50.0	19 48.7
TOTAL	13 33.3	26 66.7	39 100.0

CHI SQUARE =	0.05	with DF= 1	p value = 0.821
YATES CHI SQ =	0.01	with DF= 1	p value = 0.910
FISHER EXACT TEST	(one tail)		p value = 0.545

2-Way Contingency Table

MDLGMAM by LGBIRD

FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT	0	1	TOTAL
0	13 13.3 33.3 65.0 50.0	7 6.7 17.9 35.0 53.8	20 51.3
1	13 12.7 33.3 68.4 50.0	6 6.3 15.4 31.6 46.2	19 48.7
TOTAL	26 66.7	13 33.3	39 100.0

CHI SQUARE =	0.05	with DF= 1	p value = 0.821
YATES CHI SQ =	0.01	with DF= 1	p value = 0.910
FISHER EXACT TEST	(one tail)		p value = 0.545

2-Way Contingency Table

MDLGMAM (rows) by VLGEMAM (columns); cells: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

MDLGMAM		VLGEMAM 0	VLGEMAM 1	TOTAL
0	FREQUENCY	19	1	20
	EXPECTED	18.5	1.5	
	TOT PCT	48.7	2.6	51.3
	ROW PCT	95.0	5.0	
	COL PCT	52.8	33.3	
1	FREQUENCY	17	2	19
	EXPECTED	17.5	1.5	
	TOT PCT	43.6	5.1	48.7
	ROW PCT	89.5	10.5	
	COL PCT	47.2	66.7	
TOTAL		36	3	39
		92.3	7.7	100.0

```
CHI SQUARE     =   0.42  with DF=  1       p value = 0.518
YATES CHI SQ   =   0.00  with DF=  1       p value = 0.963
FISHER EXACT TEST  (one tail)              p value = 0.480
```

2-Way Contingency Table

MDLGMAM (rows) by SMMAM (columns); cells: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

MDLGMAM		SMMAM 0	SMMAM 1	TOTAL
0	FREQUENCY	19	1	20
	EXPECTED	18.5	1.5	
	TOT PCT	48.7	2.6	51.3
	ROW PCT	95.0	5.0	
	COL PCT	52.8	33.3	
1	FREQUENCY	17	2	19
	EXPECTED	17.5	1.5	
	TOT PCT	43.6	5.1	48.7
	ROW PCT	89.5	10.5	
	COL PCT	47.2	66.7	
TOTAL		36	3	39
		92.3	7.7	100.0

```
CHI SQUARE     =   0.42  with DF=  1       p value = 0.518
YATES CHI SQ   =   0.00  with DF=  1       p value = 0.963
FISHER EXACT TEST  (one tail)              p value = 0.480
```

2-Way Contingency Table

MDLGMAM (rows) by LAGBIRD (columns). Cell contents: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

MDLGMAM		0	1	TOTAL
0	FREQUENCY	18	2	20
	EXPECTED	16.9	3.1	
	TOT PCT	46.2	5.1	51.3
	ROW PCT	90.0	10.0	
	COL PCT	54.5	33.3	
1	FREQUENCY	15	4	19
	EXPECTED	16.1	2.9	
	TOT PCT	38.5	10.3	48.7
	ROW PCT	78.9	21.1	
	COL PCT	45.5	66.7	
TOTAL		33	6	39
		84.6	15.4	100.0

```
CHI SQUARE     =   0.91  with DF=  1        p value = 0.339
YATES CHI SQ   =   0.26  with DF=  1        p value = 0.609
FISHER EXACT TEST  (one tail)               p value = 0.305
```

2-Way Contingency Table

MELEA (rows) by LEPUS (columns). Cell contents: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT

MELEA		0	1	TOTAL
0	FREQUENCY	8	17	25
	EXPECTED	7.1	17.9	
	TOT PCT	20.5	43.6	64.1
	ROW PCT	32.0	68.0	
	COL PCT	72.7	60.7	
1	FREQUENCY	3	11	14
	EXPECTED	3.9	10.1	
	TOT PCT	7.7	28.2	35.9
	ROW PCT	21.4	78.6	
	COL PCT	27.3	39.3	
TOTAL		11	28	39
		28.2	71.8	100.0

```
CHI SQUARE     =   0.50  with DF=  1        p value = 0.482
YATES CHI SQ   =   0.11  with DF=  1        p value = 0.739
FISHER EXACT TEST  (one tail)               p value = 0.376
```

2-Way Contingency Table

MELEA by SYLV (cells: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

MELEA \ SYLV	0	1	TOTAL
0	3 1.9 7.7 12.0 100.0	22 23.1 56.4 88.0 61.1	25 64.1
1	0 1.1 0.0 0.0 0.0	14 12.9 35.9 100.0 38.9	14 35.9
TOTAL	3 7.7	36 92.3	39 100.0

```
CHI SQUARE       =   1.82  with DF=  1        p value = 0.178
YATES CHI SQ  =   0.52  with DF=  1        p value = 0.470
FISHER EXACT TEST   (one tail)             p value = 0.252
```

2-Way Contingency Table

MELEA by SMMEDMAM (cells: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

MELEA \ SMMEDMAM	0	1	TOTAL
0	9 8.3 23.1 36.0 69.2	16 16.7 41.0 64.0 61.5	25 64.1
1	4 4.7 10.3 28.6 30.8	10 9.3 25.6 71.4 38.5	14 35.9
TOTAL	13 33.3	26 66.7	39 100.0

```
CHI SQUARE       =   0.22  with DF=  1        p value = 0.637
YATES CHI SQ  =   0.01  with DF=  1        p value = 0.906
FISHER EXACT TEST   (one tail)             p value = 0.458
```

2-Way Contingency Table

MELEA — LGBIRD

FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT	0	1	TOTAL
0	19 16.7 48.7 76.0 73.1	6 8.3 15.4 24.0 46.2	25 64.1
1	7 9.3 17.9 50.0 26.9	7 4.7 17.9 50.0 53.8	14 35.9
TOTAL	26 66.7	13 33.3	39 100.0

```
CHI SQUARE     =   2.73  with DF=  1      p value = 0.099
YATES CHI SQ  =   1.69  with DF=  1      p value = 0.195
FISHER EXACT TEST   (one tail)           p value = 0.098
```

2-Way Contingency Table

MELEA — VLGEMAM

FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT	0	1	TOTAL
0	23 23.1 59.0 92.0 63.9	2 1.9 5.1 8.0 66.7	25 64.1
1	13 12.9 33.3 92.9 36.1	1 1.1 2.6 7.1 33.3	14 35.9
TOTAL	36 92.3	3 7.7	39 100.0

```
CHI SQUARE     =   0.01  with DF=  1      p value = 0.923
YATES CHI SQ  =   0.28  with DF=  1      p value = 0.596
FISHER EXACT TEST   (one tail)           p value = 0.711
```

2-Way Contingency Table

MELEA (rows) by SMMAM (columns). Cell contents: FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT

MELEA		0	1	TOTAL
0	FREQUENCY	23	2	25
	EXPECTED	23.1	1.9	
	TOT PCT	59.0	5.1	64.1
	ROW PCT	92.0	8.0	
	COL PCT	63.9	66.7	
1	FREQUENCY	13	1	14
	EXPECTED	12.9	1.1	
	TOT PCT	33.3	2.6	35.9
	ROW PCT	92.9	7.1	
	COL PCT	36.1	33.3	
TOTAL		36	3	39
		92.3	7.7	100.0

CHI SQUARE = 0.01 with DF= 1 p value = 0.923
YATES CHI SQ = 0.28 with DF= 1 p value = 0.596
FISHER EXACT TEST (one tail) p value = 0.711

2-Way Contingency Table

MELEA (rows) by LAGBIRD (columns). Cell contents: FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT

MELEA		0	1	TOTAL
0	FREQUENCY	21	4	25
	EXPECTED	21.2	3.8	
	TOT PCT	53.8	10.3	64.1
	ROW PCT	84.0	16.0	
	COL PCT	63.6	66.7	
1	FREQUENCY	12	2	14
	EXPECTED	11.8	2.2	
	TOT PCT	30.8	5.1	35.9
	ROW PCT	85.7	14.3	
	COL PCT	36.4	33.3	
TOTAL		33	6	39
		84.6	15.4	100.0

CHI SQUARE = 0.02 with DF= 1 p value = 0.887
YATES CHI SQ = 0.10 with DF= 1 p value = 0.749
FISHER EXACT TEST (one tail) p value = 0.635

2-Way Contingency Table

SYLV by SMMEDMAM (cells: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

SYLV	0	1	TOTAL
0	2 1.0 5.1 66.7 15.4	1 2.0 2.6 33.3 3.8	3 7.7
1	11 12.0 28.2 30.6 84.6	25 24.0 64.1 69.4 96.2	36 92.3
TOTAL	13 33.3	26 66.7	39 100.0

```
CHI SQUARE        =    1.63  with DF=  1       p value = 0.203
YATES CHI SQ      =    0.41  with DF=  1       p value = 0.524
FISHER EXACT TEST   (one tail)                 p value = 0.253
```

2-Way Contingency Table

SYLV by LGBIRD (cells: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

SYLV	0	1	TOTAL
0	3 2.0 7.7 100.0 11.5	0 1.0 0.0 0.0 0.0	3 7.7
1	23 24.0 59.0 63.9 88.5	13 12.0 33.3 36.1 100.0	36 92.3
TOTAL	26 66.7	13 33.3	39 100.0

```
CHI SQUARE        =    1.63  with DF=  1       p value = 0.203
YATES CHI SQ      =    0.41  with DF=  1       p value = 0.524
FISHER EXACT TEST   (one tail)                 p value = 0.284
```

2-Way Contingency Table

SYLV / VLGEMAM — FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT

SYLV	0	1	TOTAL
0	3 2.8 7.7 100.0 8.3	0 0.2 0.0 0.0 0.0	3 7.7
1	33 33.2 84.6 91.7 91.7	3 2.8 7.7 8.3 100.0	36 92.3
TOTAL	36 92.3	3 7.7	39 100.0

```
CHI SQUARE      =   0.27  with DF=  1        p value = 0.603
YATES CHI SQ    =   0.37  with DF=  1        p value = 0.544
FISHER EXACT TEST   (one tail)               p value = 0.781
```

2-Way Contingency Table

SYLV / SMMAM — FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT

SYLV	0	1	TOTAL
0	3 2.8 7.7 100.0 8.3	0 0.2 0.0 0.0 0.0	3 7.7
1	33 33.2 84.6 91.7 91.7	3 2.8 7.7 8.3 100.0	36 92.3
TOTAL	36 92.3	3 7.7	39 100.0

```
CHI SQUARE      =   0.27  with DF=  1        p value = 0.603
YATES CHI SQ    =   0.37  with DF=  1        p value = 0.544
FISHER EXACT TEST   (one tail)               p value = 0.781
```

2-Way Contingency Table

SYLV by LAGBIRD (cells: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

SYLV	LAGBIRD 0	LAGBIRD 1	TOTAL
0	3 2.5 7.7 100.0 9.1	0 0.5 0.0 0.0 0.0	3 7.7
1	30 30.5 76.9 83.3 90.9	6 5.5 15.4 16.7 100.0	36 92.3
TOTAL	33 84.6	6 15.4	39 100.0

CHI SQUARE = 0.59 with DF= 1 p value = 0.442
YATES CHI SQ = 0.00 with DF= 1 p value = 0.949
FISHER EXACT TEST (one tail) p value = 0.597

2-Way Contingency Table

SMMEDMAM by LGBIRD (cells: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

SMMEDMAM	LGBIRD 0	LGBIRD 1	TOTAL
0	10 8.7 25.6 76.9 38.5	3 4.3 7.7 23.1 23.1	13 33.3
1	16 17.3 41.0 61.5 61.5	10 8.7 25.6 38.5 76.9	26 66.7
TOTAL	26 66.7	13 33.3	39 100.0

CHI SQUARE = 0.92 with DF= 1 p value = 0.337
YATES CHI SQ = 0.36 with DF= 1 p value = 0.548
FISHER EXACT TEST (one tail) p value = 0.278

2-Way Contingency Table

SMMEDMAM by VLGEMAM (cells: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

SMMEDMAM		0	1	TOTAL
0	FREQUENCY	13	0	13
	EXPECTED	12.0	1.0	
	TOT PCT	33.3	0.0	33.3
	ROW PCT	100.0	0.0	
	COL PCT	36.1	0.0	
1	FREQUENCY	23	3	26
	EXPECTED	24.0	2.0	
	TOT PCT	59.0	7.7	66.7
	ROW PCT	88.5	11.5	
	COL PCT	63.9	100.0	
TOTAL		36	3	39
		92.3	7.7	100.0

```
CHI SQUARE     =  1.63  with DF=  1       p value = 0.203
YATES CHI SQ   =  0.41  with DF=  1       p value = 0.524
FISHER EXACT TEST  (one tail)             p value = 0.284
```

2-Way Contingency Table

SMMEDMAM by SMMAM (cells: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

SMMEDMAM		0	1	TOTAL
0	FREQUENCY	13	0	13
	EXPECTED	12.0	1.0	
	TOT PCT	33.3	0.0	33.3
	ROW PCT	100.0	0.0	
	COL PCT	36.1	0.0	
1	FREQUENCY	23	3	26
	EXPECTED	24.0	2.0	
	TOT PCT	59.0	7.7	66.7
	ROW PCT	88.5	11.5	
	COL PCT	63.9	100.0	
TOTAL		36	3	39
		92.3	7.7	100.0

```
CHI SQUARE     =  1.63  with DF=  1       p value = 0.203
YATES CHI SQ   =  0.41  with DF=  1       p value = 0.524
FISHER EXACT TEST  (one tail)             p value = 0.284
```

2-Way Contingency Table

SMMEDMAM (rows) by LAGBIRD (columns). Cell contents: FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT

SMMEDMAM		0	1	TOTAL
0	FREQUENCY	12	1	13
	EXPECTED	11.0	2.0	
	TOT PCT	30.8	2.6	33.3
	ROW PCT	92.3	7.7	
	COL PCT	36.4	16.7	
1	FREQUENCY	21	5	26
	EXPECTED	22.0	4.0	
	TOT PCT	53.8	12.8	66.7
	ROW PCT	80.8	19.2	
	COL PCT	63.6	83.3	
TOTAL		33	6	39
		84.6	15.4	100.0

```
CHI SQUARE     =  0.89  with DF=  1       p value = 0.347
YATES CHI SQ   =  0.22  with DF=  1       p value = 0.638
FISHER EXACT TEST  (one tail)             p value = 0.333
```

2-Way Contingency Table

SMMAM (rows) by LAGBIRD (columns). Cell contents: FREQUENCY, EXPECTED, TOT PCT, ROW PCT, COL PCT

SMMAM		0	1	TOTAL
0	FREQUENCY	31	5	36
	EXPECTED	30.5	5.5	
	TOT PCT	79.5	12.8	92.3
	ROW PCT	86.1	13.9	
	COL PCT	93.9	83.3	
1	FREQUENCY	2	1	3
	EXPECTED	2.5	0.5	
	TOT PCT	5.1	2.6	7.7
	ROW PCT	66.7	33.3	
	COL PCT	6.1	16.7	
TOTAL		33	6	39
		84.6	15.4	100.0

```
CHI SQUARE     =  0.80  with DF=  1       p value = 0.370
YATES CHI SQ   =  0.00  with DF=  1       p value = 0.949
FISHER EXACT TEST  (one tail)             p value = 0.403
```

2-Way Contingency Table

VLGEMAM by SMMAM (cells: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

VLGEMAM	SMMAM 0	SMMAM 1	TOTAL
0	33 33.2 84.6 91.7 91.7	3 2.8 7.7 8.3 100.0	36 92.3
1	3 2.8 7.7 100.0 8.3	0 0.2 0.0 0.0 0.0	3 7.7
TOTAL	36 92.3	3 7.7	39 100.0

CHI SQUARE = 0.27 with DF= 1 p value = 0.603
YATES CHI SQ = 0.37 with DF= 1 p value = 0.544
FISHER EXACT TEST (one tail) p value = 0.781

2-Way Contingency Table

VLGEMAM by LAGBIRD (cells: FREQUENCY / EXPECTED / TOT PCT / ROW PCT / COL PCT)

VLGEMAM	LAGBIRD 0	LAGBIRD 1	TOTAL
0	30 30.5 76.9 83.3 90.9	6 5.5 15.4 16.7 100.0	36 92.3
1	3 2.5 7.7 100.0 9.1	0 0.5 0.0 0.0 0.0	3 7.7
TOTAL	33 84.6	6 15.4	39 100.0

CHI SQUARE = 0.59 with DF= 1 p value = 0.442
YATES CHI SQ = 0.00 with DF= 1 p value = 0.949
FISHER EXACT TEST (one tail) p value = 0.597

APPENDIX I

RECOVERED MASSES AND ESTIMATED VOLUMES OF WALL RUBBLE

Appendix I

RECOVERED MASSES AND ESTIMATED VOLUMES OF WALL RUBBLE

Trench No.	Unit No.	Level No.	Wallfall Mass (kg)	Estimated Wallfall Volume (cu m)
1	1	0	9.30	0.0053
1	1	1a	41.00	0.0232
1	1	2a	22.00	0.0124
1	1	3	11.35	0.0064
1	1	4	6.00	0.0034
1	1	5	1.20	0.0007
1	1	6	0.00	0.0000
1	1	7	0.00	0.0000
1	1	8	0.00	0.0000
1	1	9	0.00	0.0000
1	2	1a	44.60	0.0252
1	2	2	5.60	0.0032
1	2	3	3.60	0.0020
1	2	4	1.30	0.0007
1	2	5	0.00	0.0000
1	2	6	0.40	0.0002
1	3	0	0.00	0.0000
1	3	1	7.65	0.0043
1	3	2	11.00	0.0062
1	3	3	0.00	0.0000
Total 1			165.00	0.0932

(missing data coded as nd; all rubble was weighed; volume estimate assumes 1769.6 kg/cu m, based on weight of local rhyolites and rhyolitic tuffs; actual wall constructed of these stones would have 1.5 - 2.0 times this volume)

Appendix I (continued)

RECOVERED MASSES AND ESTIMATED VOLUMES OF WALL RUBBLE

	Trench No.	Unit No.	Level No.	Wallfall Mass (kg)	Estimated Wallfall Volume (cu m)
	2	1	0	0.00	0.0000
	2	1	1	0.00	0.0000
	2	1	3	0.00	0.0000
	2	1	4	0.00	0.0000
	2	1	5	0.00	0.0000
	2	1	6	0.00	0.0000
	2	1	7	0.00	0.0000
	2	1	8	0.00	0.0000
	2	1	9	0.00	0.0000
	2	1	10	0.00	0.0000
	2	1	11	0.00	0.0000
	2	1	12	0.00	0.0000
	2	1	13	0.00	0.0000
	2	1	14	0.00	0.0000
	2	2	1a	0.00	0.0000
	2	2	2	0.00	0.0000
	2	2	3	0.00	0.0000
	2	2	4	0.00	0.0000
	2	3	0	0.00	0.0000
	2	3	1	0.00	0.0000
	2	3	2	5.25	0.0030
	2	3	3	1.45	0.0008
	2	3	4	0.00	0.0000
	2	3	5	0.00	0.0000
	2	3	6	0.00	0.0000
	2	3	7	0.00	0.0000
	2	3	8	0.00	0.0000
	2	3	9	0.00	0.0000
	2	3	10	0.00	0.0000
	2	3	11	0.00	0.0000
Total	2			6.70	0.0038

Appendix I (continued)

RECOVERED MASSES AND ESTIMATED VOLUMES OF WALL RUBBLE

Trench No.	Unit No.	Level No.	Wallfall Mass (kg)	Estimated Wallfall Volume (cu m)
3	1	0	1.50	0.0008
3	1	1	nd	nd
3	1	2	nd	nd
3	1	3	nd	nd
3	1	4	0.90	0.0005
3	1	5	1.55	0.0009
3	1	6	2.90	0.0016
3	1	7	0.00	0.0000
3	1	8	0.00	0.0000
3	1	9	0.00	0.0000
3	2	0	0.00	0.0000
3	2	1	33.35	0.0188
3	2	2	19.10	0.0108
3	2	3	6.95	0.0039
3	2	4	7.15	0.0040
3	2	5	4.35	0.0025
3	2	5a	0.00	0.0000
3	2	6	1.20	0.0007
3	2	6a	0.25	0.0001
3	2	7	3.20	0.0018
3	2	7a	0.00	0.0000
3	2	8	1.10	0.0006
3	2	9	1.75	0.0010
3	2	10	4.37	0.0025
3	2	10a	2.00	0.0011
3	2	11	7.40	0.0042
3	2	12	3.30	0.0019
Total 3			102.59	0.0580

Appendix I (continued)

RECOVERED MASSES AND ESTIMATED VOLUMES OF WALL RUBBLE

	Trench No.	Unit No.	Level No.	Wallfall Mass (kg)	Estimated Wallfall Volume (cu m)
	5	1	1	2.60	0.0015
	5	1	2	3.00	0.0017
	5	1	3	3.00	0.0017
	5	1	4	5.50	0.0031
	5	1	5	12.30	0.0070
	5	1	6	7.30	0.0041
	5	1	7	2.50	0.0014
	5	1	8	3.30	0.0019
	5	1	9	4.14	0.0023
	5	2	1	nd	nd
	5	2	2	1.50	0.0008
	5	2	3	3.75	0.0021
	5	2	4	9.50	0.0054
	5	2	5	16.00	0.0090
	5	2	6	31.15	0.0176
	5	2	7	18.80	0.0106
	5	2	8	18.35	0.0104
	5	2	9	25.50	0.0144
	5	2	10	30.50	0.0172
	5	2	11	2.60	0.0015
	5	2	12	3.00	0.0017
	5	2	13	2.64	0.0015
	5	2	14	2.10	0.0012
	5	2	15	nd	nd
Total	5			209.21	0.1183

Appendix I (continued)

RECOVERED MASSES AND ESTIMATED VOLUMES OF WALL RUBBLE

Trench No.	Unit No.	Level No.	Wallfall Mass (kg)	Estimated Wallfall Volume (cu m)
6	1	0	13.50	0.0076
6	1	1	0.00	0.0000
6	1	1-5	55.80	0.0315
6	1	2	2.40	0.0014
6	1	3	3.80	0.0021
6	1	4	3.05	0.0017
6	1	5	4.10	0.0023
6	1	6	5.60	0.0032
6	1	7	8.35	0.0047
6	1	8	2.65	0.0015
6	1	9	1.90	0.0011
6	1	10	2.10	0.0012
6	1	11	0.80	0.0005
6	2	0	59.30	0.0335
6	2	1	6.90	0.0039
6	2	2	9.25	0.0052
6	2	3	14.35	0.0081
6	2	4	4.90	0.0028
6	2	5	20.40	0.0115
6	2	6	21.35	0.0121
6	2	7	42.40	0.0240
6	2	8	25.60	0.0145
6	2	9	20.00	0.0113
6	2	1-12	130.35	0.0737
6	2	10	25.35	0.0143
6	2	11	29.15	0.0165
6	2	12	23.55	0.0133
6	2	13	0.00	0.0000
6	2	14	9.45	0.0053
6	2	15	0.00	0.0000
6	2	16	2.60	0.0015
Total	6		548.95	0.3103

Appendix I (continued)

RECOVERED MASSES AND ESTIMATED VOLUMES OF WALL RUBBLE

	Trench No.	Unit No.	Level No.	Wallfall Mass (kg)	Estimated Wallfall Volume (cu m)
	7	1	1-3	7.65	0.0043
	7	1	1a	26.80	0.0151
	7	1	2a	0.00	0.0000
	7	1	4-6	13.00	0.0073
	7	1	7	0.00	0.0000
	7	1	8	0.00	0.0000
	7	1	9	nd	nd
	7	2	0	32.55	0.0184
	7	2	1-4	36.70	0.0207
	7	2	5	nd	nd
	7	2	5a	12.20	0.0069
	7	2	6	1.00	0.0006
	7	2	6a	3.00	0.0017
	7	2	7	0.95	0.0005
	7	2	8	0.00	0.0000
	7	2	9	0.00	0.0000
	7	2	10	nd	nd
	7	2	11	0.00	0.0000
	7	2	12	0.00	0.0000
Total	7			134.12	0.0758

Appendix I (continued)

RECOVERED MASSES AND ESTIMATED VOLUMES OF WALL RUBBLE

Trench No.	Unit No.	Level No.	Wallfall Mass (kg)	Estimated Wallfall Volume (cu m)
8	1	0	71.32	0.0403
8	1	1	26.65	0.0151
8	1	2	38.09	0.0215
8	1	3	11.40	0.0064
8	1	4	1.20	0.0007
8	1	5	3.67	0.0021
8	1	6	1.60	0.0009
8	1	7	3.45	0.0019
8	1	8	0.57	0.0003
8	1	9	5.70	0.0032
8	1	10	0.00	0.0000
8	2	0	40.65	0.0230
8	2	1	33.45	0.0189
8	2	2	14.25	0.0081
8	2	3	0.00	0.0000
8	2	4	0.00	0.0000
8	2	5	0.57	0.0003
8	2	6	2.25	0.0013
8	2	7	3.10	0.0018
8	2	8	0.54	0.0003
8	2	9	4.25	0.0024
8	2	10	2.10	0.0012
8	2	11	0.00	0.0000
8	2	12	0.00	0.0000
8	2	13	0.00	0.0000
8	2	14	0.00	0.0000
Total 8			264.81	0.1497

Appendix I (continued)

RECOVERED MASSES AND ESTIMATED VOLUMES OF WALL RUBBLE

Trench No.	Unit No.	Level No.	Wallfall Mass (kg)	Estimated Wallfall Volume (cu m)
8a	1	1	155.00	0.0876
8a	1	2	0.00	0.0000
8a	1	3	2.36	0.0013
8a	1	4	3.49	0.0020
8a	1	5	2.77	0.0016
8a	1	6	3.18	0.0018
8a	1	7	5.63	0.0032
8a	1	8	4.36	0.0025
8a	2	0	70.70	0.0400
8a	2	1	47.60	0.0269
8a	2	23s	23.60	0.0133
8a	2	45s	1.36	0.0008
8a	2	6n	1.80	0.0010
8a	2	7n	2.45	0.0014
8a	2	8n	2.60	0.0015
8a	2	9-14	0.00	0.0000
Total 8a			326.90	0.1849

Appendix I (continued)

RECOVERED MASSES AND ESTIMATED VOLUMES OF WALL RUBBLE

	Trench No.	Unit No.	Level No.	Wallfall Mass (kg)	Estimated Wallfall Volume (cu m)
	9	1	0	22.30	0.0126
	9	1	1	2.60	0.0015
	9	2	0	38.90	0.0220
	9	2	1	3.60	0.0020
	9	2	2	1.95	0.0011
	9	2	3	3.10	0.0018
	9	2	4	1.45	0.0008
	9	2	5	6.45	0.0036
	9	2	6	3.10	0.0018
	9	2	7	0.00	0.0000
	9	3	0	31.00	0.0175
	9	3	1	0.00	0.0000
	9	3	2	4.15	0.0023
	9	3	3	28.35	0.0160
	9	3	4	16.50	0.0093
	9	3	5	1.10	0.0006
	9	3	6	2.45	0.0014
	9	3	7	0.00	0.0000
	9	3	8	0.00	0.0000
	9	3	9	0.00	0.0000
	9	3	10	0.00	0.0000
Total	9			167.00	0.0943

Appendix I (continued)

RECOVERED MASSES AND ESTIMATED VOLUMES OF WALL RUBBLE

	Trench No.	Unit No.	Level No.	Wallfall Mass (kg)	Estimated Wallfall Volume (cu m)
	10	1	0-1	47.90	0.0271
	10	1	2	17.50	0.0099
	10	1	3	4.20	0.0024
	10	1	4	3.40	0.0019
	10	1	5	0.00	0.0000
	10	1	6	0.00	0.0000
	10	2	0	63.00	0.0356
	10	2	1	23.30	0.0132
	10	2	2	10.70	0.0060
	10	2	3	2.60	0.0015
	10	2	4	12.60	0.0071
	10	2	5	7.60	0.0043
	10	2	6	5.00	0.0028
	10	2	7	29.13	0.0165
	10	2	8	7.25	0.0041
	10	2	9	2.30	0.0013
	10	2	10	3.90	0.0022
Total	10			240.38	0.1359
TOTAL OVERALL				2243.63	1.2685